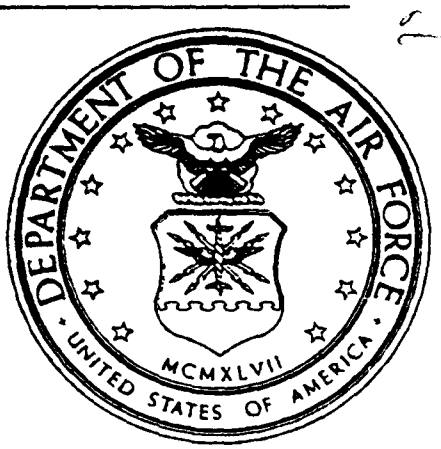

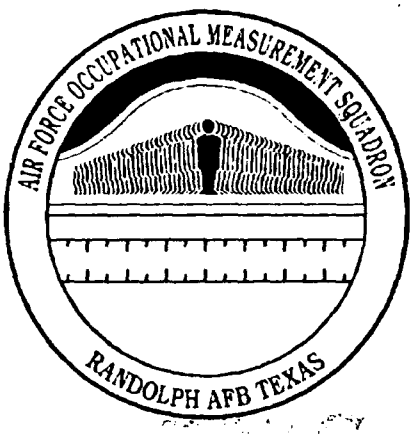

UNITED STATES AIR FORCE

OCCUPATIONAL SURVEY REPORT

COMMUNICATIONS-COMPUTER SYSTEMS CONTROL

AFSC 3C2X1

AFPT 90-493-932

JUNE 1994

OCCUPATIONAL ANALYSIS PROGRAM
AIR FORCE OCCUPATIONAL MEASUREMENT SQUADRON
AIR EDUCATION and TRAINING COMMAND
1550 5th STREET EAST
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PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Communications-Computer Systems Control career ladder, Air Force Specialty Code (AFSC) 3C2X1 (formerly AFSC 493X0). Authority for conducting occupational surveys is contained in AFI 36-2623. Computer products upon which this report is based are available for the use of operations and training officials.

The survey instrument was developed by First Lieutenant Paul K. Daly, Inventory Development Specialist, with computer programming support furnished by Mr. Wayne Fruge. Ms. Raquel A. Soliz provided administrative support. Ms. Cynthia V. Luster, Occupational Analyst, analyzed the data and wrote the final report. This report has been reviewed and approved by Major Randall C. Agee, Chief, Airman Analysis Section, Occupational Analysis Flight, Air Force Occupational Measurement Squadron (AFOMS).

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel. Additional copies are available upon request to AFOMS, Attention: Chief, Occupational Analysis Flight (OMY), 1550 5th Street East, Randolph Air Force Base Texas 78150-4449 (DSN 487-6623).

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SUMMARY OF RESULTS

1. *Survey Coverage*: The Communications-Computer Systems Control career ladder was surveyed to evaluate changes in the career ladder and to obtain current task and equipment data for use in evaluating current training programs. Survey results are based on responses from 1,465 respondents (70 percent of the personnel eligible for survey). All major using commands are well represented in the survey sample.

2. *Specialty Jobs*: Five clusters and four independent jobs were identified in the sample. Three of the clusters and all four independent jobs were directly involved in performing the technical duties and tasks pertaining to communications-computer systems control. The remaining two clusters reflected a combination of technical and supervisory task performance, and training activities.

3. *Career Ladder Progression*: Personnel at the 3- and 5-skill levels perform many tasks in common, and both groups spend the vast majority of their relative job time performing technical communications-computer systems control tasks across a wide variety of different jobs. At the 7-skill level, although members still perform a substantial amount of routine day-to-day technical communications-computer systems control tasks across a number of different jobs, a shift toward supervisory functions is evident. Personnel at the 9-skill level and Chief Enlisted Managers (CEMs) spend their relative job time exclusively on managing communications-computer systems operations and control facilities.

4. *AFMAN 36-2108 Specialty Descriptions*: All descriptions accurately depict the nature of the respective jobs.

5. *Training Analysis*: The Specialty Training Standard and the Plan of Instruction are not generally supported by OSR data. Both documents, as well as the general training philosophy for this career ladder, should be thoroughly evaluated by training personnel and career ladder managers to determine the most effective and efficient way to provide training to the diverse functions of this career ladder.

6. *Implications*: The diversity of this career ladder is such that the usual AETC measurement criteria for ABR training does not support the majority of the current course. A comprehensive review of the career ladder structure, personnel utilization practices, and the current training system appears warranted.

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OCCUPATIONAL SURVEY REPORT (OSR)
COMMUNICATIONS-COMPUTER SYSTEMS CONTROL CAREER LADDER
(AFSC 3C2X1)

INTRODUCTION

This is a report of an occupational survey of the Communications-Computer Systems Control career ladder completed by the Air Force Occupational Measurement Squadron. This survey was requested by HQ ATC/TTOK, Randolph AFB, Texas, to review the structure of the career ladder. There is also a need to evaluate the impact of changes due to the recent restructuring of training in the Air Force. On 31 October 1993, this AFSC was directly converted to 3C2X1 (formerly 493X0) to conform to the new enlisted specialty coding nomenclature. The last survey report pertaining to this career ladder was published in January 1989.

Background

As described in AFMAN 36-2108 Specialty Descriptions, dated April 1991, personnel in this career ladder are responsible: for monitoring, analyzing, and controlling the performance of communications-computer systems; coordinating operation of transmission media, networks, and circuits; and correcting conditions interfering with effectiveness; and directing and making operational adjustments to communications-computer systems equipment.

Entry into the career ladder is from Basic Military Training School (BMTS) through an 18-week, 1-day formal training course conducted at Keesler AFB MS. Resident ABR training includes instruction principle-centered training relating to: radio and wire telecommunications equipment, systems, and circuits; procedures and facilities for monitoring circuits and analyzing their performance; techniques and standards relating to checking signals to ensure acceptable quality and serve as a basis for predicting and preventing or correcting circuit deterioration or system malfunction; electronic principles, codes, equipment, and operation; principles of Defense Switched Network (DSN) specialized test equipment; system analysis and troubleshooting techniques; computer principles and digital techniques; and control and coordination facilities and procedures. Entry into the career ladder currently requires an Armed Services Vocational Aptitude Battery (ASVAB) Electronic score of 67.

SURVEY METHODOLOGY

Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory (JI) AFPT 90-493-932, dated February 1992. A tentative task list was prepared after reviewing pertinent career ladder publications and directives, tasks from the previous survey instrument, and data from the last OSR. The preliminary task list was refined and validated through personal interviews with 71 subject-matter experts (SMEs), selected to cover a variety of major commands (MAJCOMs) at the following operational bases:

BASE	REASON FOR VISIT
Keesler AFB MS	Location for resident technical training school
Kelly AFB TX	CRITICOMM facility; DCTN/DDN Node site; site; patch and test facility SATCOM (Medina Annex)
Offutt AFB NE	AF Global Weather Control patch and test facility; DSCS SATCOM; Special Security Office patch and test facility
Tinker AFB OK	DCTN node; AUTODIN switching center; BCTF facility; AWACS; combat communications facility
McClellan AFB CA	DCTN node; wideband communications; AUTODIN switching center; primary systems control facility; BCTF
Hill AFB UT	BCTF; tactical air control (mobile vans)
Peterson AFB CO	Peterson: BCTF Falcon: CSOC- Consolidated Space Operations Center Cheyenne Mountain: NORAD; systems control facility; network/relay control center Buckley: SATCOM

Lowry AFB CO	Defense Finance and Accounting Service; BCTF
Scott AFB IL	AFTCO; red patch and test facility; REDNET network control center; AFNET network control center

The resulting JI contained a comprehensive listing of 645 tasks grouped under 12 duty headings and a background section requesting such information as grade, duty title, functional area, if retrained from another specialty, and test or support equipment used or operated.

Survey Administration

From October 1992 through March 1993, Military Personnel Flights (MPF) at operational units worldwide administered the inventory to all AFSC 493X0 personnel (currently identified as 3C2X1 personnel). Members eligible for this survey consisted of the total assigned 3-, 5-, 7-, and 9-skill levels and CEM-level population, excluding the following: (1) hospitalized personnel; (2) personnel in transition for a permanent change of station; (3) personnel retiring during the time the JIs were administered to the field; and (4) personnel in their job less than 6 weeks. Job incumbents were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Military Personnel Center (AFMPC).

Each individual who completed the inventory first completed an identification and biographical information section and then checked each task performed in his or her current job. After checking all tasks performed, each member then rated each of these tasks on a 9-point scale, showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (very small amount time spent) through 5 (about average time spent) to 9 (very large amount spent).

To determine relative time spent for each task checked by a respondent, all of the incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

Survey Sample

Personnel were selected to participate in this survey so as to ensure an accurate representation across MAJCOMs and military paygrade groups. All eligible DAFSC 3C2X1 personnel were mailed survey booklets. Table 1 reflects the MAJCOM distribution of assigned AFSC 3C2X1 personnel as of October 1992. The 1,465 respondents in the final sample represent 63 percent of the total assigned personnel and 70 percent of the total personnel surveyed. Table 2 reflects the paygrade distribution for these AFSC 3C2X1 personnel. As reflected in these tables, the survey sample is an excellent representation of the career ladder population.

TABLE 1

MAJCOM DISTRIBUTION OF AFSC 3C2X1 PERSONNEL

COMMAND	PERCENT OF ASSIGNED*	PERCENT OF SAMPLE
ACC	20	19
USAFE	17	19
AFSPACECOM	11	12
PACAF	11	10
AMC	9	9
AFMC	7	8
AF ELEM OTHER	7	5
AIA	5	5
AETC	4	4
AFC4A	3	-
7thCG	2	4
EUR	2	-
Other	3	5

Total Assigned - 2,344*
Total Eligible for Survey - 2,093
Total in Sample - 1,465
Percent of Eligible in Sample - 70%
Percent of Assigned in Sample - 63%

* Assigned strength as of October 1992

TABLE 2

PAYGRADE DISTRIBUTION OF SURVEY SAMPLE

PAYGRADE	PERCENT OF ASSIGNED (N=2,244)*	PERCENT IN SAMPLE (N=1,465)
E-1 to E-3	17%	18%
E-4	27%	28%
E-5	27%	27%
E-6	17%	16%
E-7	10%	9%
E-8	2%	1%
E-9	1%	1%

*Assigned strength as of October 1992

NOTE: Columns may not add to 100 percent due to rounding

Task Factor Administration

Job descriptions alone do not provide sufficient data for making decisions about career ladder documents or training programs. Task factor information is needed for a complete analysis of the career ladder. While most participants in the survey process completed a USAF JI, selected senior DAFSC 3C2X1 personnel were asked to complete booklets rendering judgements on task training emphasis (TE) or task difficulty (TD). The TE and TD booklets were processed separately from the JIs. The information gained from these task factor data is used in various analyses and is a valuable part of the training decision process.

Task Difficulty (TD). Each individual completing a TD booklet was asked to rate all of the tasks on a 9-point scale (from extremely low to extremely high) as to the relative difficulty of each task in the inventory. Difficulty is defined as the length of time required by the average incumbent to learn to do the task. TD data were independently collected from 41 experienced 7-skill level personnel stationed worldwide. Interrater reliability was determined to be excellent, which reflects very strong agreement among raters. Ratings were standardized so tasks have an average difficulty of 5.00, with a standard deviation of 1.00. The resulting data yield essentially a rank ordering of tasks indicating the degree of difficulty for each task in the inventory.

Training Emphasis (TE). Individuals completing TE booklets were asked to rate tasks on a 10-point scale (from no training required to extremely high amount of training required). TE is a rating of which tasks require structured training for first-enlistment personnel. Structured training is defined as training provided at resident technical schools, field training detachments (FTD), mobile training teams (MTT), formal on-the-job-training (OJT), or any other organized training method. TE data were independently collected from 48 experienced 7-skill level personnel stationed worldwide. The interrater reliability for these raters was good, indicating there was strong agreement among raters as to which tasks required some form of structured training and which did not. In this specialty, tasks have an average TE rating of 2.75 and a standard deviation of 1.54; tasks considered high in TE have ratings of 4.29 and above. As was discussed in the TD section above, TE rating data may also be used to rank order tasks indicating those tasks which senior NCOs in the field consider the most important for first-enlistment personnel to know.

When used in conjunction with the primary criterion of percent members performing, TD and TE ratings can provide insight into first-enlistment personnel training requirements. Such insights may suggest a need for lengthening or shortening portions of instruction supporting entry-level jobs.

SPECIALTY JOBS
(Career Ladder Structure)

The occupational analysis process begins with an examination of the career ladder structure. The structure of jobs within the Communications-Computer Systems Control career ladder was examined on the basis of similarity of tasks performed and the percent of time spent ratings provided by job incumbents, independent of other specialty background factors.

Each individual in the sample performs a set of tasks called a job. For the purpose of organizing individual jobs into similar units of work, an automated job clustering program is used. This hierarchical grouping program is a basic part of the Comprehensive Occupational Data Analysis Program (CODAP) system for job analysis. Each individual job description (all the tasks performed by that individual and the relative amount of time spent on those tasks) in the sample is compared to every other job description in terms of tasks performed and the relative amount of time spent on each task in the JI. The automated system is designed to locate the two job descriptions with the most similar tasks and percent time ratings and combine them to form a composite job description. In successive stages, new members are added to initial groups, or new groups are formed based on the similarity of tasks performed and similar time ratings in the individual job descriptions.

As mentioned above, the basic identifying group used in the hierarchical job structuring process is the Job. When two or more jobs have a substantial degree of similarity in tasks performed and time spent on tasks, they are grouped together and identified as a Cluster. The resulting job structure information can be used to evaluate the accuracy of career ladder documents (i.e., AFMAN 36-2108 Specialty Descriptions, the Career Field Education and Training Plan (CFETP), and Specialty Training Standards (STSs)) and to gain a better understanding of current utilization patterns. The above terminology will be used in the discussion of the AFSC 3C2X1 career ladder structure.

Overview of Specialty Jobs

Structure analysis identified five clusters and four jobs within the survey sample. Based on task similarity and relative time spent, the division of jobs performed by DAFSC 3C2X1 personnel is illustrated in Figure 1, and a listing of those jobs is provided below. The stage (ST) number shown beside each title is a reference to computer-printed information; the number of personnel in each stage (N) is also shown.

I. BASE CENTRAL TEST FACILITY (BCTF) CLUSTER (ST0129, N=153)

- A. BCTF Technician Job (GP0054)
- B. Node Site Coordinator Job (ST0298)
- C. Circuit Actions NCO Job (ST0205)

COMMUNICATIONS-COMPUTER SYSTEMS CONTROL SPECIALTY JOBS
(N=1,465)

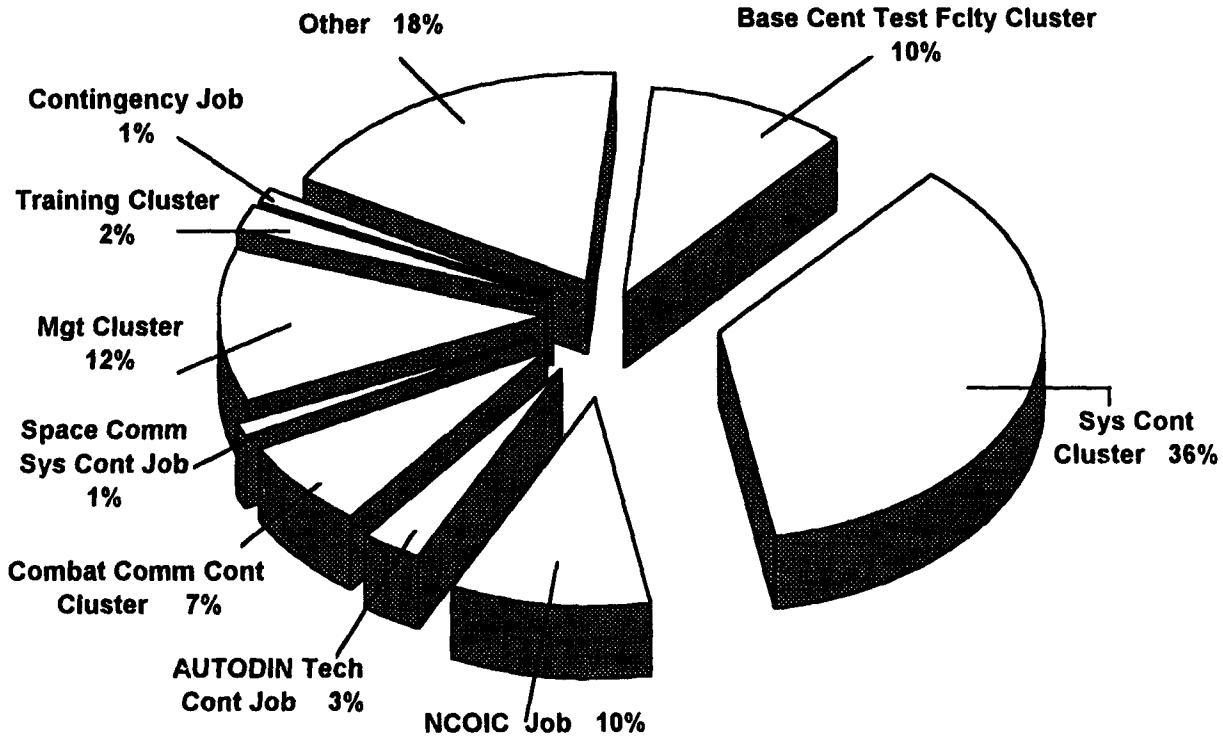


FIGURE 1

II. SYSTEMS CONTROLLER CLUSTER (ST0163, N=529)

A. Systems Controller Job (ST0259)
B. Technical Controller Job (ST0169)
C. Network Controller Job (ST0360)
D. CRITICOMM Systems Controller Job (ST0435)

III. NCOIC JOB (ST0167, N=148)

IV. AUTODIN TECHNICAL CONTROLLER JOB (ST0171, N=37)

V. COMBAT COMMUNICATIONS CONTROLLER CLUSTER (ST0165, N=101)

A. AN/TSQ-111 Combat Communications Controller Job (ST0313)
B. AN/TSC-107 Combat Communications Controller Job (ST0361)

VI. SPACE COMMUNICATIONS SYSTEMS CONTROLLER JOB (ST0175, N=19)

VII. MANAGEMENT CLUSTER (ST0060, N=168)

A. Shift Supervisor Job (ST0182)
B. Job Controller Job (ST0179)
C. Program Manager Job (ST0184)
D. Superintendent Job (ST0214)

VIII. TRAINING CLUSTER (ST0052, N=36)

A. Training NCO Job (ST0310)
B. Technical School Instructor Job (ST0344)

IX. CONTINGENCY JOB (ST0166, N=13)

The respondents forming these stages account for 82 percent of the survey sample. The remaining 18 percent were performing tasks or series of tasks which did not group with any of the defined jobs. Job titles given by respondents representative of these personnel include Customer Service Technician, Superintendent Research and Analysis, Facility Chief, Software Developer, and Allocator Engineer.

Group Descriptions

The following paragraphs contain brief descriptions of the clusters and jobs identified through the career ladder structure analysis. Table 3 presents the relative time spent on duties by members of these Specialty Jobs. Selected background data for these jobs are provided in Table 4. Representative tasks for all the stages are contained in Appendix A.

Another way to illustrate the content of jobs is by summarizing tasks performed in common by incumbents across the career ladder. CODAP has a process of identifying groups of related tasks and grouping them together to form task modules (TMs). The basis for identifying these related tasks is called coperformance. Coperformance assumes that if incumbents perform task A and task B, there is a high likelihood that the two tasks share common skills and knowledge and can be trained together. CODAP calculates an index of coperformance for each task with every other task by examining the task performance patterns of all the survey respondents as a whole. Thus, the resulting TMs can be used to summarize and compare jobs. The display shows the number of tasks included in a module, the percent time spent on tasks in that module, and an average percent members performing the particular TM. Representative TMs are listed as part of the job description. The list of tasks within respective modules is presented in Appendix B.

I. BASE CENTRAL TEST FACILITY (BCTF) CLUSTER (ST0129). The 153 members in this cluster account for 10 percent of the survey sample. Operating from a base central test facility (BCTF), these airmen maintain local communications-computer systems. Thirty-four percent of their relative job time is devoted to maintaining distribution frames, switchboards, and in-house cabling. An additional 35 percent of their relative job time is spent on circuit monitoring and analysis and general systems control functions. These airmen perform an average of 72 tasks. Sixty-four percent of the members in this cluster hold the paygrades of E-4 and E-5 (39 percent and 25 percent, respectively) and average over 5 years in the career field.

Three jobs were identified within this cluster. The BCTF Technician job controls communications-computer systems activities required at base level, where a technical control facility is not typically colocated. The Node Site Coordinator job ensures the continuous operation of the Defense Data Network (DDN) node site, its equipment, and all connected circuitry. The Circuit Actions NCO job establishes the activation of a circuit, performs the quality control testing of circuits, and troubleshoots all circuits in support of the Defense Communication System (DCS). The following job descriptions illustrate the specific functions and activities necessary for complete and comprehensive support of communications-computer systems at a BCTF.

A. BCTF Technician Job (GP0054). The essence of this job, performed by these 72 members, involves maintaining communications-computer systems in order to ensure that user-to-user telecommunications service is kept at a BCTF. These members spend 36 percent of their

TABLE 3

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY SPECIALTY JOBS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	BCTF CLUSTER	BCTF TECH JOB	NODE SITE COORD JOB	CIRCUIT ACTIONS NCO JOB	SYS CONT CLUSTER	SYS CONT JOB
A. ORGANIZING AND PLANNING	6	5	5	10	2	*
B. DIRECTING AND IMPLEMENTING	7	5	5	13	5	4
C. INSPECTING AND EVALUATING	1	1	*	2	1	*
D. TRAINING	2	2	2	2	3	*
E. PERFORMING ADMINISTRATIVE FUNCTIONS	10	9	11	9	9	6
F. PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS CONTROL FUNCTIONS	16	12	14	21	14	12
G. PERFORMING CIRCUIT MONITORING AND ANALYSIS	19	25	25	10	22	11
H. PERFORMING WIDEBAND SYSTEMS PERFORMANCE MONITORING AND ANALYSIS	3	2	2	3	4	5
I. MAINTAINING TELECOMMUNICATIONS SERVICE	34	36	33	29	38	60
J. ERECTING AND MAINTAINING TACTICAL AND COMBAT COMMUNICATIONS EQUIPMENT AND FACILITIES	1	1	1	*	1	1
K. PERFORMING MOBILITY FUNCTIONS	1	1	*	*	*	-
L. PERFORMING PRIMARY CONTROL CENTER AND DEFENSE SATELLITE COMMUNICATIONS SYSTEMS FUNCTIONS	*	*	*	-	*	-

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 3 (CONTINUED)

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY SPECIALTY JOBS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	TECH CONT JOB	NETWORK CONT JOB	CRITICOMM SYS CONT JOB	NCOIC JOB	AUTODIN TECH CONT JOB	COMBAT COMM CONT CLUSTER
A. ORGANIZING AND PLANNING	2	2	1	11	3	4
B. DIRECTING AND IMPLEMENTING	5	4	4	12	8	4
C. INSPECTING AND EVALUATING	1	1	1	6	2	1
D. TRAINING	3	3	3	11	7	4
E. PERFORMING ADMINISTRATIVE FUNCTIONS	9	10	14	13	7	7
F. PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS CONTROL FUNCTIONS	14	14	14	10	24	6
G. PERFORMING CIRCUIT MONITORING AND ANALYSIS	24	12	14	13	14	9
H. PERFORMING WIDEBAND SYSTEMS PERFORMANCE MONITORING AND ANALYSIS	4	1	3	2	1	1
I. MAINTAINING TELECOMMUNICATIONS SERVICE	37	48	45	21	32	23
J. ERECTING AND MAINTAINING TACTICAL AND COMBAT COMMUNICATIONS EQUIPMENT AND FACILITIES	1	3	1	1	1	24
K. PERFORMING MOBILITY FUNCTIONS	*	*	-	*	1	17
L. PERFORMING PRIMARY CONTROL CENTER AND DEFENSE SATELLITE COMMUNICATIONS SYSTEMS FUNCTIONS	*	*	*	*	*	*

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 3 (CONTINUED)

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY SPECIALTY JOBS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	AN/TSQ-111 COMBAT COMM CONT JOB	AN/TSC-107 COMBAT COMM CONT JOB	SPACE COMM SYS CONT JOB	MGT CLUSTER	SHIFT SUPVSR JOB	JOB CONT JOB
A. ORGANIZING AND PLANNING	4	3	2	19	8	7
B. DIRECTING AND IMPLEMENTING	5	4	6	21	21	12
C. INSPECTING AND EVALUATING	2	1	1	12	5	4
D. TRAINING	4	3	5	6	8	9
E PERFORMING ADMINISTRATIVE FUNCTIONS	7	8	9	25	22	48
F. PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS CONTROL FUNCTIONS	6	6	8	10	22	14
G. PERFORMING CIRCUIT MONITORING AND ANALYSIS	11	5	20	2	6	1
H. PERFORMING WIDEBAND SYSTEMS PERFORMANCE MONITORING AND ANALYSIS	1	*	6	*	1	*
I. MAINTAINING TELECOMMUNICATIONS SERVICE	22	26	41	4	7	4
J. ERECTING AND MAINTAINING TACTICAL AND COMBAT COMMUNICATIONS EQUIPMENT AND FACILITIES	24	21	1	*	*	-
K. PERFORMING MOBILITY FUNCTIONS	14	21	-	1	*	1
L. PERFORMING PRIMARY CONTROL CENTER AND DEFENSE SATELLITE COMMUNICATIONS SYSTEMS FUNCTIONS	*	-	1	-	-	-

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 3 (CONTINUED)

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY SPECIALTY JOBS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	PRGM MGR JOB	SUPT JOB	TRNG CLUSTER	TRNG NCO JOB	TECH SCH INSTR JOB	CONTG JOB
A. ORGANIZING AND PLANNING	21	24	5	6	3	7
B. DIRECTING AND IMPLEMENTING	18	25	9	10	4	5
C. INSPECTING AND EVALUATING	11	15	2	3	*	3
D. TRAINING	2	5	50	47	65	1
E. PERFORMING ADMINISTRATIVE FUNCTIONS	33	19	19	17	23	39
F. PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS CONTROL FUNCTIONS	9	5	3	4	1	5
G. PERFORMING CIRCUIT MONITORING AND ANALYSIS	*	1	5	6	*	*
H. PERFORMING WIDEBAND SYSTEMS PERFORMANCE MONITORING AND ANALYSIS	-	*	*	1	-	-
I. MAINTAINING TELECOMMUNICATIONS SERVICE	1	3	5	5	3	1
J. ERECTING AND MAINTAINING TACTICAL AND COMBAT COMMUNICATIONS EQUIPMENT AND FACILITIES	1	*	*	*	-	1
K. PERFORMING MOBILITY FUNCTIONS	2	1	*	1	1	36
L. PERFORMING PRIMARY CONTROL CENTER AND DEFENSE SATELLITE COMMUNICATIONS SYSTEMS FUNCTIONS	-	-	-	-	-	-

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 4

SELECTED BACKGROUND DATA FOR SPECIALTY CLUSTERS AND JOBS

	BCTF CLUSTER	BCTF TECH JOB	NODE SITE COORD JOB	CIRCUIT ACTIONS NCO JOB	SYS CONT CLUSTER	SYS CONT JOB	TECH CONT JOB	NETWORK CONT JOB
NUMBER IN GROUP	153	72	18	29	529	10	471	24
PERCENT OF SAMPLE	10%	5%	1%	2%	36%	*	32%	2%
PERCENT IN CONUS	77%	83%	94%	34%	40%	60%	43%	2%
DAFSC DISTRIBUTION:								
3C231	23%	19%	39%	7%	27%	30%	26%	54%
3C251	67%	75%	56%	72%	65%	70%	66%	46%
3C271	10%	6%	6%	21%	8%	0%	8%	0%
3C291/3C200	0%	0%	0%	0%	0%	0%	0%	0%
PREDOMINANT GRADE(S):	E-4/5	E-4	E-3/4	E-4/5	E-4/5	E-3/4	E-4/5	E-3/4
AVG MONTHS IN CAREER FIELD	63	61	46	91	60	42	61	40
AVG MONTHS IN SERVICE	81	77	54	115	79	62	80	44
PERCENT WITH 4 YEARS IN CAREER FIELD (TICF)	35%	35%	55%	9%	40%	60%	39%	71%
PERCENT SUPERVISING	31%	12%	12%	52%	52%	30%	37%	25%
AVG NUMBER OF TASKS PERFORMED	72	79	68	86	109	46	116	58

* Less than 1 percent

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY CLUSTERS AND JOBS

	CRITICOMM SYS CONT JOB	NCOIC JOB	AUTODIN TECH CONT JOB	COMBAT COMM CONT CLUSTER	AN/TSQ-111 COMBAT COMM CONT JOB	AN/TSC-107 COMBAT COMM CONT JOB	SPACE COMM SYS CONT JOB	MGT CLUSTER
NUMBER IN GROUP	13	148	37	101	67	25	19	168
PERCENT OF SAMPLE	1%	10%	2%	7%	5%	2%	1%	11%
PERCENT IN CONUS	0%	70%	93%	80%	84%	68%	95%	61%
DAFSC DISTRIBUTION:								
3C231	8%	0%	22%	27%	24%	20%	26%	2%
3C251	85%	47%	73%	44%	43%	52%	74%	24%
3C271	8%	51%	5%	30%	33%	28%	16%	60%
3C291/3C200	0%	0%	0%	0%	0%	0%	0%	14%
PREDOMINANT GRADE(S)	E-5	E-5/6	E-5	E-4/5	E-4/5	E-4/5	E-3/4	E-6/7
AVG MONTHS IN CAREER FIELD	65	112	59	71	75	66	38	136
AVG MONTHS IN SERVICE	91	155	73	109	110	114	57	182
PERCENT WITH 4 YEARS IN CAREER FIELD (TICF)	31%	0%	38%	33%	30%	28%	63%	4%
PERCENT SUPERVISING	0%	86%	57%	50%	50%	64%	32%	73%
AVG NUMBER OF TASKS PERFORMED	78	146	61	173	193	118	38	53

* Less than 1 percent

TABLE 4 (CONTINUED)

SELECTED BACKGROUND DATA FOR SPECIALTY CLUSTERS AND JOBS

	SHIFT SUPVSR JOB	JOB CONT JOB	PRGM MGR JOB	SUPT JOB	TRNG CLUSTER	TRNG NCO JOB	TECH SCH INSTR JOB	CONTINGENCY JOB
NUMBER IN GROUP	13	13	31	86	36	17	10	13
PERCENT OF SAMPLE	1%	1%	2%	6%	2%	1%	*	1%
PERCENT IN CONUS	85%	46%	52%	62%	69%	53%	90%	85%
DAFSC DISTRIBUTION:								
3C231	8%	8%	0%	0%	3%	0%	10%	15%
3C251	54%	85%	16%	8%	69%	65%	60%	31%
3C271	38%	8%	68%	72%	28%	35%	30%	54%
3C291/3C200	0%	0%	16%	20%	0%	0%	0%	0%
PREDOMINANT GRADE(S)	E-5	E-4/5	E-6	E-6/7	E-5	E-5/6	E-5	E-4/5
AVG MONTHS IN CAREER FIELD	80	73	146	157	94	89	93	92
AVG MONTHS IN SERVICE	132	106	194	203	132	129	132	123
PERCENT WITH 4 YEARS IN CAREER FIELD (TICF)	8%	24%	0%	0%	6%	6%	10%	23%
PERCENT SUPERVISING	77%	93%	23%	94%	25%	47%	0%	15%
AVG NUMBER OF TASKS PERFORMED	68	43	34	63	44	67	17	40

* Less than 1 percent

relative job time maintaining distribution frames, modems, and circuits in telecommunications systems. An additional 25 percent of their relative job time is spent isolating malfunctions and testing metallic line circuits. Of the average 73 tasks performed, typical tasks include:

test metallic line circuits for shorts
test metallic line circuits for opens
test metallic line circuits for grounds
remove or replace modems
perform bit error rate tests on modems
wire-wrap cross-connects on distribution frames
direct wiring of cross-connections on distribution frames or matrix boards

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0039	measure metallic line circuits - circuit testing	7	11	75
0017	general tech control	22	23	62
0035	systems control - fault isolation/patching	19	14	50

These representative TMs illustrate that the largest focus of this job is on general technical control activities (TM17) and systems control (TM35). The BCTF job is distinguished by the amount of time devoted to TM39, measuring metallic line circuits.

Seventy-five percent report they hold the 5-skill level DAFSC. The predominant paygrades are E-3 and E-4 (22 percent and 51 percent, respectively).

B. Node Site Coordinator Job (ST0298). The responsibilities of these 18 airmen involve maintenance of node hardware or circuits to ensure continuous operation of a local node site. They spend 73 percent of their relative job time isolating malfunctions, monitoring equipment or networks, and acting as a liaison between users or associated facilities. The Node Site Coordinator job is narrowly focused; incumbents perform an average of only 68 tasks (lowest number of tasks performed by any job within this cluster). Forty-three tasks account for the top 50 percent of their relative job time. Tasks representative of the work performed include:

perform fault isolation on modems
perform fault isolation on computer network circuits, such as DDN, DSN, AFNET, or REDNET
coordinate circuit and system outages with users or associated facilities
coordinate maintenance dispatch for user equipment problems with job control or contract maintenance
monitor communications equipment using automated systems
implement activation or changes of circuits

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0020	circuit analysis - monitor auto systems	7	8	65
0017	general tech control - general tech controller	22	22	62
0035	systems control - fault isolation/patching	19	17	52
0010	network management	5	4	46

Comparisons between the TMs of the BCFT Technician and the Node Site Coordinator jobs show both jobs share involvement in the general technical control module (TM17) and the systems control module (TM35). However, the Node Site Coordinator spends a substantial amount of time on circuit analysis (TM20).

Respondents average 3 years and 8 months in the career field (lowest time in the career field for any of the jobs within this cluster). The predominant paygrades are E-3 and E-4 (39 percent and 33 percent, respectively). Six of the eighteen airmen are assigned to AF Military Personnel Center (AFMPC).

C. Circuit Actions NCO Job (ST0205). Fifty percent of these 29 individuals' relative job time is devoted to all aspects of communications-computer circuitry. Respondents holding this job are involved in the request, activation, change, deactivation, and maintenance of Defense Communications Systems (DCS) circuits within a BCTF. An additional 13 percent of their relative job time is spent on management and supervisory functions. They average 86 tasks (highest average number of tasks performed by any job within this cluster). Tasks which characterize this job include:

implement activation or changes of circuits
maintain or prepare circuit history folders
direct wiring of cross-connections on distribution frames or matrix boards
establish changes in circuits or channels
label patch panels, equipment, or alternate routings
coordinate special communications requirements with users or DISA
wire-wrap cross-connects on distribution frames

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0007	circuit actions - supervision	11	13	71
0017	general tech control	22	21	62
0034	supervision	6	6	61
0035	systems control - fault isolation/patching	19	12	55

These TMs illustrate the breadth of activities performed by airmen in this job. As with the other jobs within this cluster, TM17 accounts for a common content of tasks representative of the work performed in this job. These 28 members are spending 19 percent of their relative job time performing supervisory-type tasks found in TMs 7 and 34.

Averaging over 7 1/2 years in the career field, 77 percent of these individuals hold the 7-skill level DAFSC. Sixty-six percent of these individuals are assigned overseas.

II. SYSTEMS CONTROLLER CLUSTER (ST0163). Accounting for 36 percent of the survey sample, these 529 members oversee the entire communications-computer system to ensure user-to-user service is maintained. Systems control responsibilities include the management, operation, and maintenance of the communications-computer systems, and decision-making and control execution at the lowest level consistent with authority and resources. These responsibilities account for 75 percent of their relative job time. Both external conditions, such as

engineering constraints, user requirements, natural disasters; and internal situations, such as equipment failures and circuit outages, fall under the purview of systems control. These airmen perform an average of 109 tasks. Forty percent are in their first enlistment. Averaging 5 years in the career field, the predominant paygrades for this cluster are E-4 and E-5.

Four jobs were identified within this cluster. The Systems Controller job assesses the performance of communications service through detection and isolation of system failure. The Technical Controller job continually takes the pulse of the communications-computer system by delegating system control and quality control measures in order to ensure effective maintenance of transmission paths and facilities. The Network Controller job performs corrective measures on networks and any associated transmission circuitry. The CRITICOMM Systems Controller job addresses communications-computer systems control activities as required by a CRITICOMM facility. The following job descriptions illustrate the specific functions and activities necessary for complete and comprehensive systems control of communications-computer systems for the Defense Communications Agency (DCA).

A. Systems Controller Job (ST0259). This job, comprised of 10 individuals, is narrow in scope. Eighty-three percent of these members' relative job time is spent assessing the performance of a communications-computer system through fault isolation of the system or of its circuits before equipment degradation or system failure occurs. These airmen perform an average of 46 tasks with only 26 tasks accounting for 50 percent of their relative job time. Examples of representative tasks include:

perform digital circuit loop-backs
perform equipment loop-backs
perform fault isolation on circuits using analog patch bays
patch digital lines
perform fault isolation on circuits using digital patch bays
perform fault isolation on DC circuits or systems
direct fault isolation or correction of circuit or system malfunctions

The representative TM for this job includes:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0035	systems control - fault isolation/patching	19	37	73

This TM illustrates the emphasis of this job on assessment of system performance through fault isolation or patching activities.

The predominant paygrades held by 8 of the 10 members are E-3 and E-4 (divided equally between the two paygrades). Averaging a little over 5 years' TAFMS, 6 of the 10 respondents are in their first enlistment.

B. Technical Controller Job (ST0169). Accounting for 32 percent of the survey, these 471 airmen are responsible for ensuring quality service to users; simplistic in appearance, this responsibility is the true essence of the career field. The Technical Controller job keeps support facilities informed of any and all factors affecting communications. These members perform an average 116 tasks (highest average number of tasks for any job within the survey). Seventy-five percent of their relative job time is spent maintaining (34 percent), monitoring and analyzing (24 percent), and controlling (14 percent) transmission of telecommunications to ensure continuous and uninterrupted service. Typical technical control tasks include:

coordinate circuit and system outages with users or associated facilities
perform fault isolation on circuits using analog patch bays
perform fault isolation on analog circuits
perform audio channel loop-backs
coordinate circuit or equipment problems with other technical controls or communications facilities
patch digital lines
perform impulse noise tests

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0035	systems control - fault isolation/patching	19	18	82
0037	circuit and analysis testing - quality control	13	8	75

These two TMs illustrate the emphasis in this job on assessing and correcting equipment degradation or system outages on telecommunications service.

Individuals in this job report, on the average, a little over 5 years in the career field, with most reporting they hold the 5-skill level DAFSC (66 percent). Fifty-seven percent of these airmen are assigned overseas.

C. Network Controller Job (ST0360). Unlike the Technical Controller job that maintains the transmission media that carries the circuit, these 24 individuals are adept at maintaining communications-computer networks and associated circuitry. Forty-eight percent of their relative job time is spent maintaining telecommunications systems and performing activities, such as fault isolation, (re)synchronizations, and loop-feedbacks of circuits. These airmen perform an average of 40 tasks, lowest average number of tasks performed by any job within this cluster. Tasks characteristic of the work performed include:

perform cryptographic resynchronizations
perform fault isolation on circuits using digital patch bays
perform equipment loop-backs
coordinate circuit and system outages with users or associated facilities
load or rekey cryptographic material
coordinate cryptographic key changes with users

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0027	cryptographic functions	6	10	77
0035	systems control - fault isolation/patching	19	27	71
0014	security/classified - administrative function	8	7	48

These TMs indicate once again the emphasis on TM35 as being characteristic of the work performed by the members of this cluster.

Nineteen of these twenty-four members report they are in their first enlistment and average a little over 3 years in the career field. Twelve of the twenty-four members report assignment to Air Mobility Command (AMC).

D. CRITICOMM Systems Controller Job (ST0435). This job is distinctive from all the other jobs within this cluster as a result of the functional area in which this job is performed. Twelve of the thirteen airmen in this job work in an overseas CRITICOMM facility. Similar to the Network Controller job, where 75 percent of relative job time is spent maintaining telecommunications service, performing general systems control functions, and performing circuit monitoring and analysis, these members spend 73 percent of their relative job time in these same areas. This job entails both a space and a terminal segment required for support of communications worldwide. Examples of the average 78 tasks are:

maintain or prepare CRITICOMM reports, such as condition reports (CONREPs) or status reports (STATREPs)
coordinate cryptographic key changes with users
perform equipment loop-backs
perform cryptographic resynchronizations
perform fault isolation on satellite circuits or systems
coordinate cryptographic synchronizations with distant end

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0027	cryptographic function	6	9	90
0035	systems control - isolation/patching fault	19	21	78
0014	security/classified - administrative function	8	6	45

These TMs again indicate the largest percentage of time spent by members within any TM for this job is illustrated by TM35; the same TM for all jobs within this cluster that has the largest percent of relative time spent by members within that TM.

The average paygrade for these airmen is E-5, with 11 of the 13 reporting they hold the 5-skill level DAFSC. All 13 members are assigned overseas, with 11 of the 13 members assigned to Air Intelligence Agency (AIA).

III. NCOIC JOB (ST0167). Accounting for 10 percent of the survey sample, these 148 NCOs spend 40 percent of their relative job time performing supervisory and management activities, with the remaining 60 percent on the core AFSC-specific communications-computer

systems control activities. Eighty-six percent of these members report supervisory responsibilities, supervising an average of four people. These airmen perform a varied array of tasks; an average of 146 tasks are performed by these individuals (with 92 tasks accounting for 50 percent of their relative job time). Examples of tasks which members in this job are likely to perform include:

determine work priorities
counsel personnel
write EPRs
direct fault isolation or correction of circuit or system malfunctions
perform bit error rate tests on digital circuits or equipment
coordinate circuit and system outages with users or associated facilities
perform bit error rate tests on modems

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0034	supervision	6	4	79
0030	training OJT	14	7	61
0021	supervision - management	24	12	63
0017	general technical control	22	10	60
0035	systems control - fault isolation/patching	19	9	63
0017	circuit actions - supervision	11	4	52

These TMs illustrate typical NCOIC responsibilities; with the largest cumulative amount of their relative job time spent in the training and supervisory TMs (i.e.,TM34, TM30, and TM21).

Representing some of the more senior members in the career ladder, these individuals average a little less than 13 years' TAFMS. The predominant paygrade for this job is E-5 and E-6 (36 percent and 38 percent, respectively).

IV. AUTODIN TECHNICAL CONTROLLER JOB (ST0171). Accounting for 2 percent of the survey sample, the 37 NCOs holding this job perform electronic data communications systems control activities. Like many of the other technical jobs or clusters, these airmen spend 70 percent of their relative job time in the same three duties: maintaining telecommunications service (32 percent), performing general systems control functions (24 percent), and performing circuit monitoring and analysis (14 percent). However, these activities are carried out at AUTODIN switching centers (ASCs); 85 percent of these members report their functional area as an ASC with the remaining 15 percent reporting they work at a patch and test facility. Some of the most representative tasks of the average 61 performed include:

maintain or prepare automated or manual DD Forms 1443-1 (ASC Trouble and Action Record)
coordinate circuit and system outages with users or associated facilities
perform fault isolation on circuits using digital patch bays
maintain or prepare automated or manual DD Forms 1445 (Technical Control Communications Work Order)
perform digital circuit loop-backs
patch digital equipment

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0004	technical control consoles	4	7	65
0035	systems control - fault isolation/patching	19	22	56
0023	maintain/prepare forms	4	4	59

As with the Systems Controller cluster, TM35 represents the type of tasks typically performed by these members. An AUTODIN Technical Controller, as illustrated, can be expected to perform activities covering technical control consoles (TM4); only job within this study that spends any significant amount of time in this TM.

These NCOs average a little less than 5 years in the career field and are predominantly in the paygrade of E-4. Seventy-three percent of these members are assigned to AMC.

V. COMBAT COMMUNICATIONS CONTROLLER CLUSTER (ST0165). Accounting for 7 percent of the survey sample, this cluster is composed of 101 airmen. They spend 40 percent of their relative job time erecting and maintaining tactical and combat communications equipment and facilities, and performing mobility functions. These activities are performed in support of communications requirements of the Joint Tactical Communications Office (TRI-TAC) (i.e., tri-service communication equipment systems that includes the Departments of the Army, Navy, and Air Force). Supporting the systems control concept, these NCOs spend 38 percent of their relative job time on communications-computer systems control activities. Two distinctive communications systems are maintained by these members: The AN/TSQ-111, communications nodal control element (CNCE); and the AN/TSC-107, transportable communications central, also known as a quick reaction package (QRP). These airmen perform an average of 173 tasks. Examples of combat communications controller tasks include:

camouflage mobile sites
prepare clothing or equipment for deployment
perform audio channel loop-backs
patch digital equipment
check continuity between local and distant technical controls
coordinate circuit and system outages with users or associated facilities

Representative TMs for this cluster include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0003	continuity checks	4	2	78
0035	systems control - fault isolation/patching	19	11	74
0028	mobility	29	16	73
0025	satellite transmission media - tactical	22	11	64
0029	transmission media - combat/tactical	7	2	42

TMs 28, 25, and 29 (i.e., mobility and satellite transmission media, and transmission media, respectively) are the dominant TMs for this cluster, illustrating the emphasis on combat and mobility responsibilities.

The airmen in this cluster average over 8 1/2 years' TAFMS. Seventy-seven percent of these individuals hold the 5- or 7-skill level DAFSC (44 percent and 30 percent, respectively). Seventy-nine percent are assigned to ACC, with an additional 13 percent assigned to Pacific Air Force (PACAF).

Two jobs were identified within this cluster which require mentioning.

Personnel in the AN/TSQ-111 Combat Communications Controller job perform communications-computer systems control in a combat or tactical environment. These airmen use the AN/TSQ-111, CNCE communications system (a state-of-the-art communications system) that serves as a technical control center for the Tactical Air Control System (TACS). These airmen are able to: provide interface between transmission facilities and users and to manage communications resources at a node set to support combat commanders.

AN/TSQ-111 Combat Communications Controller Job

Number of members	67
Percent of total sample	.5%
Percent of cluster	67%
Average number of tasks performed	193
Average time in career field	75 MOS
Average TAFMS	110 MOS
Predominant DAFSC	3C251/3C271
Predominant paygrades	WIDE DISTRIBUTION

Personnel in the AN/TSC-107 Combat Communications Controller job, in a wartime setting, are tasked with providing a transportable mobile communications unit. This unit is the AN/TSC-107, transportable communications central, also known as the QRP. This QRP sets up communications quickly (usually within 24 hours) for command and control operations. Once total command and control operations are in place, this QRP is then deployed back to garrison or to a new location.

AN/TSC-107 Combat Communications Controller Job

Number of members	25
Percent of total sample	.2%
Percent of cluster	25%
Average of number of tasks performed	118
Average time in career field	66 MOS
Average TAFMS	114 MOS
Predominant DAFSC	3C251/3C271
Predominant paygrades	E-4, E-5, AND E-6

VI. SPACE COMMUNICATIONS SYSTEMS CONTROLLER JOB (ST0175). Nineteen NCOs comprise this job, similar in content with the Systems Controller cluster, yet limited in function and in scope. These members spend 69 percent of their relative job time (compared to the 75 percent of relative job time for the Systems Controller cluster) managing, operating, and maintaining communications-computer systems. However, 18 of these 19 airmen perform these responsibilities at the Space Communications Squadron at Falcon AFB CO. An

average of only 38 tasks are performed by these NCOs (lowest average number of tasks for all technical jobs in this AFSC) compared to the average 109 tasks for the Systems Controller cluster. Examples of Space Communications Systems Controller tasks include:

perform bit error rate tests on digital circuits or equipment
monitor satellite communications links
perform fault isolation on digital circuits
maintain or prepare automated or manual DD Forms 1753 (Master Station Log)
perform fault isolation on satellite circuits or systems

The representative TM for this job includes:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0035	systems control - fault isolation/patching	19	27	47

This TM illustrates the general communications-computer systems control responsibilities for this job.

Members holding this job have the least experience of jobs noted in the survey sample, averaging a little over 3 years in the career field and over 4 1/2 years TAFMS. Sixty-three percent are in their first enlistment. Seventeen of the nineteen are assigned to AF Space Command (AFSPACECOM).

VII. MANAGEMENT CLUSTER (ST0060). This cluster of jobs encompasses those management and supervisory functions necessary for the operation of any maintenance environment. Accounting for 12 percent of the survey sample, these 168 airmen spend 77 percent of their relative job time performing an average of 52 tasks covering supervisory, management, and administrative functions. Seventy-three percent report they supervise an average of four individuals. Thirty-nine percent are assigned overseas. This cluster contains, as a whole, the most senior personnel for the career ladder, averaging over 11 years in the career field. Sixty percent hold the 7-skill level DAFSC and are in the paygrades of E-6 and E-7 (33 percent and 30 percent, respectively).

Four jobs were identified within this cluster. One job, Shift Supervisor, although technical in nature (i.e., performing AFSC-specific tasks) spends almost half of their relative job time performing supervisory and management functions. Another job, Superintendents, spends over

two-thirds of their relative job time on those supervisory and management functions. In the Job Controller job, NCOs spend a majority of their time planning, scheduling, coordinating, and controlling communications-computer systems control support activities. Members in the fourth job, Program Manager job, concentrate their time on various management activities rather than actually managing people.

A. Shift Supervisor Job (ST0182). Although technical AFSC-specific activities are performed by these 13 NCOs, 42 percent of their relative job time is spent performing organizing and planning, directing and implementing, inspecting and evaluating, and training activities. Seventy-seven percent of these airmen report supervisory responsibilities, supervising an average of four people. Forty-four percent of these individuals' relative job time is spent performing administrative functions and general communications-computer systems control functions (22 percent, each). Of the average 68 tasks performed, the following are representative:

determine work priorities
maintain or prepare automated or manual DD Forms 1753 (Master Station Log)
supervise Communications-Computer Systems Control Specialists (AFSC 49350)
direct fault isolation or correction of circuit or system malfunctions
counsel personnel
write EPRs

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0014	security/classified - administrative function	8	10	65
0034	supervision	6	7	58
0023	maintain/prepare forms	4	3	44
0021	supervision - management	24	18	42

TMs 14 and 21 illustrate the strong dominance of management-type activities performed by these members.

Averaging over 6 1/2 years in the career field, the predominant paygrade for these NCOs is E-5. Fifty-four percent of these airmen hold the 5-skill level DAFSC.

B. Job Controller Job (ST0179). These 13 individuals spend 48 percent of their relative job time performing administrative functions. This job is narrow in scope, with those tasks they do perform requiring a lot of time. These airmen perform administrative activities that center around the job control function. Responsibilities include the control of equipment and materials in a communications-computer environment through monitoring status and maintenance actions. Typical of the average 43 job control tasks include:

dispatch maintenance specialists or equipment
destroy classified information or materials
secure facilities
store classified information or materials
maintain or prepare job status document forms
monitor or coordinate workcenter compliance with maintenance schedules

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0034	supervision	6	10	59
0014	security/classified administrative function - administrative function	8	11	59

These TMs illustrate the concentration on organizing and planning administrative functions for this job.

Averaging almost 9 years' TAFMS, these NCOs average 6 years in the career field. Eighty-five percent of this group hold the 5-skill level DAFSC, with 76 percent of them responding they are in the paygrades of E-4 and E-5 (38 percent, each). Eight of the thirteen individuals responded that their job title was Job Controller.

C. Program Manager Job (ST0184). These 31 airmen manage specific and varied programs slightly removed from the management of a communications-computer systems program. Performing an average of 34 tasks (second lowest number of tasks performed by any

job within the survey), these members concentrate on various management activities rather than actually managing people. Fifty percent of their relative job time is spent organizing and planning, directing and implementing, and inspecting and evaluating functions, with an additional 33 percent of their relative job time performing administrative functions. Examples of activities include Telecommunications Requirements Office, Operations Plans for Wartime Contingencies, Base Realignment and Closure, Telecommunications Certification Office, and HQ USAFE Systems Integration. Typical tasks that characterize this job include:

type forms, reports, or correspondence
draft correspondence
process forms, reports, or correspondence using word processors
write staff studies, surveys, or special reports
draft recommendations for system improvements
coordinate special communications requirements with users or DISA

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0034	supervision	6	22	80
0019	supervision - budgets/requirements	7	12	49
0007	circuit actions - supervision	11	17	40

These TMs illustrate the heavy concentration by these members on management activities.

These NCOs average over 12 years in the career field and over 16 years' TAFMS. The predominant paygrade for these individuals is E-6 (52 percent). Sixty-eight percent of these members hold the 7-skill level DAFSC. A majority of these NCOs (52 percent) are assigned overseas.

D. Superintendent Job (ST0214). These 86 NCOs are the most experienced members in the survey. Seventy percent of their relative job time is spent in the organizing and planning, directing and implementing, inspecting and evaluating, and training functions. An additional 19 percent of their relative job time is spent performing administrative activities. Ninety-four percent

of these individuals report supervisory responsibilities, supervising an average of seven people. An average of 63 tasks are performed by these airmen. The following are representative of the work performed:

determine work priorities
interpret policies, directives, or procedures for subordinates
draft correspondence
write EPRs
prepare recommendations for awards or decorations
supervise Communications-Computer Systems Control Technicians (AFSC 49370)

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0034	supervision	6	11	79
0021	supervision - management	24	33	75
0019	supervision - budgets/requirements	7	7	57

These TMs strongly illustrate the concentration of these members on supervisory and management activities.

Averaging a little less than 17 years' TAFMS, these NCOs have 13 years in the career field. Seventy-two percent hold the 7-skill level DAFSC. Eight percent report they are CEMs, with 92 percent holding the paygrades of E-7 and E-9 (72 percent and 12 percent, respectively).

VIII. TRAINING CLUSTER (ST0052). The training function accounts for 50 percent of these 36 members' relative job time. An additional 31 percent of their relative job time is spent performing administrative tasks (19 percent) and supervisory and management activities (12 percent). These individuals perform an average of 44 tasks. Sixty-nine percent of this cluster report they hold the 5-skill level DAFSC. Averaging 7 years and 8 months in the career field, these airmen are predominantly in the paygrade of E-5.

Two jobs were identified within this cluster. The Training NCO job encompasses any OJT requirements at the organizational level. The Technical School Instructor Job encompasses formal resident course training provided by the technical school at Keesler AFB MS.

A. Training NCO Job (ST0310). Providing OJT is the primary responsibility of these 17 individuals; the training functions accounts for 47 percent of their relative job time. An additional 33 percent of their relative job time is spent performing administrative activities (16 percent) and general AFSC-specific tasks (17 percent). Forty-seven percent of these NCOs report supervisory responsibilities, supervising an average of one person. Of the average 67 tasks, the following are representative.

develop training modules or plans
administer tests
counsel trainees on training progress
conduct facility rating or station qualification training
evaluate OJT trainees
determine OJT requirements
plan OJT

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0030	training - OJT	14	31	89
0043	CAMS	4	6	72
0013	training	7	7	51
0034	supervision	6	6	53

These TMs represent both the training and the supervisory functions of this job.

Sixty-five percent of these members hold the 5-skill level DAFSC. Averaging over 10 1/2 years' TAFMS, 53 percent of these NCOs are assigned overseas. Sixteen of the seventeen respondents stated their job title was Training NCO.

B. Technical School Instructor Job (ST0344). Responsible for the structured AFSC-specific training on communications-computer systems, 8 of these 10 trainers are assigned to the Technical School at Keesler AFB MS. The training function accounts for 65 percent of these

individuals' relative job time. An additional 23 percent of their relative job time is spent performing administrative functions. An average of 17 tasks (lowest average number of tasks performed by any job within this survey) are performed by these airmen. Typical tasks include:

evaluate progress of students
score tests
administer tests
write test questions
conduct resident course classroom training
determine resident course training requirements

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0030	training - OJT	14	44	44
0034	supervision	6	12	33

These TMs partially illustrate the work performed by this job. The coperformance requirement for TM selection was not met for a TM strictly covering technical instruction.

Nine of these ten airmen are assigned to Air Education and Training Command (AETC). Their predominant paygrade is E-5. Averaging over 7 1/2 years in the career field, 9 of the 10 hold the 5- or 7-skill level DAFSC.

IX. CONTINGENCY JOB (ST0166). The 13 respondents comprising this job are responsible for ensuring communications-computer systems are prepared for deployment and contingency operations. Thirty-six percent of these members' relative job time is spent on mobility activities. An additional 39 percent of their relative job time is spent performing administrative activities in support of deployment or contingency operations. These NCOs perform an average of 40 tasks. Examples of contingency tasks include:

participate in alerts or recalls
prepare clothing or equipment for deployment
don or doff chemical suits
fire M-16 weapons

clean weapons
assemble or disassemble weapons
prepare clothing or equipment for deployment

Representative TMs for this job include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0034	supervision	6	8	50
0014	security/classified - administrative function	8	9	34
0028	mobility	29	32	46

These TMs illustrate the emphasis on mobility activities for this job. TM28 is also reflective of the work performed in the Combat Communications Controller cluster. However, in this job, these contingency personnel spend a significantly larger percentage of their relative job time in this module (i.e., twice the average amount of relative job time compared to the Combat Communications Controller cluster).

These NCOs average a little over 7 1/2 years in the career field with an average of over 10 years' TAFMS. Fifty-four percent of these airmen hold the 7-skill level DAFSC.

Comparisons of Specialty Jobs

Five clusters and four jobs were identified in the career ladder structure analysis. Three of the five clusters were directly involved in performing the technical duties and tasks pertaining to communications-computer systems; performing the common-core general communications-computer systems control tasks.

The remaining two clusters, Management and Training clusters, involved those activities necessary for support and control of the working environment and the initial and recurring training of the career ladder members. Two of four jobs, also reflected basically the same technical duties and tasks pertaining to communications-computer systems as did the above mentioned clusters; however, the work in these jobs differed as a result of the functional area in which these jobs could be found. One job, the NCOIC job, reflected a combination of technical and supervisory task performance, with the majority of time spent on technical tasks. Another job, Superintendents, involved almost exclusively supervisory task performance.

The majority of the members in this career ladder are performing a common core of tasks centering around the control of communications-computer systems. Overall, personnel are performing jobs as defined in the current classification structure.

Comparison of Current Job Descriptions to Previous Survey Findings

The results of the specialty job analysis were compared to those of OSR AFPT 90-307-803, COMMUNICATIONS-COMPUTER SYSTEMS CONTROL CAREER LADDER (formerly AFSC 493X0), dated January 1989. After reviewing the tasks comprising the jobs identified in 1989, all of the groups with substantial numbers of personnel could be linked to similar task performances by 1994 sample groups (see Table 5).

There were three jobs identified in the current sample which did not have a direct match in the 1989 career ladder structure. This reflects the shift in current policies and practices of day-to-day communications-computer systems control activities. Seven jobs from the 1989 study do not appear in the current structure; the personnel in these jobs, not present in the last survey, represent very small percentages of the survey samples. Tasks performed by personnel in these jobs, not identified in the current survey are still being performed, but not at a level which resulted in these members forming distinct jobs.

Aside from these minor variations involving small numbers of personnel, the vast majority of the current sample were found to be performing jobs identified in 1989, thus displaying a relatively stable career ladder over time.

ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, in conjunction with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as AFMAN 36-2108 Specialty Descriptions and the Specialty Training Standard (STS), reflect what career ladder personnel are actually doing in the field.

The distribution of skill-level groups across the career ladder specialty jobs is displayed in Table 6, while Table 7 offers another perspective by displaying the relative percent time spent on each duty across the skill-level groups. A typical pattern of progression is present, with personnel spending more of their relative time on duties involving supervisory, managerial, and training tasks as they move upward toward the 7-skill level, 9-skill level, or the CEM code. It is also obvious, though, that 7-skill level personnel are still involved with technical task performance, as will be pointed out in the specific skill-level group discussions below.

TABLE 5

SPECIALTY JOB COMPARISONS BETWEEN CURRENT AND 1989 SURVEYS

CURRENT SURVEY (N=1,465)	PERCENT OF SAMPLE	1989 SURVEY (N=1,595)	PERCENT OF SAMPLE
BASE CENTRAL TEST FACILITY CLUSTER (N=153)	10%	-	
BCTF Technician Job (N=72)	5%	Base Control Test Facility Technician IJT (N=10)	1%
Node Site Coordinator Job (N=18)	1%	-	
Circuit Actions NCO Job (N=29)	2%	Circuit Actions Personnel Cluster (N=84)	1%
SYSTEMS CONTROLLER CLUSTER (N=529)	36%	-	
Systems Controller Job (N=10)	*	Telecommunications Service Systems Analysis Personnel Cluster (N=11)	1%
Technical Controller Job (N=471)	32%	Communications Systems Technical Control Personnel Cluster (N=541)	34%
Network Controller Job (N=24)	2%	Network Controllers Cluster (N=40)	2%
CRITICOMM Controller Job (N=13)	1%	CRITICOMM Controllers IJT (N=5)	*
NCOIC JOB (N=148)	10%	Shift Leaders and Supervisors Cluster (N=34)	2%
AUTODIN TECHNICAL CONTROLLER JOB (N=37)	2%	AUTODIN Switching Center Personnel Cluster (N=32)	2%
COMBAT COMMUNICATIONS CONTROLLER CLUSTER (N=101)	7%	Combat Communications Systems Personnel IJT (N=117)	7%
SPACE COMMUNICATIONS SYSTEMS CONTROLLER CLUSTER (N=19)	*	-	

- Indicates no match in report
* Indicates less than 1 percent

TABLE 5 (CONTINUED)

SPECIALTY JOB COMPARISONS BETWEEN CURRENT AND 1989 SURVEYS

CURRENT SURVEY (N=1,465)	PERCENT OF SAMPLE	1989 SURVEY (N=1,595)	PERCENT OF SAMPLE
MANAGEMENT CLUSTER (N=168)	11%	-	
Shift Supervisor Job (N=13)	*	Shift Supervisors and NCOICs IJT (N=20)	1%
Job Controller Job (N=13)	*	-	
Program Manager Job (N=31)	*	Computer Operators/Administration Technical Cluster (N=38)	2%
Superintendent Job (N=86)	*	-	
TRAINING CLUSTER (N=36)	*	-	
Training NCO Job (N=16)	*	Training NCOs IJT (N=17)	1%
Technical School Instructor Job (N=10)	*	Training Instructors (Technical School) IJT (N=24)	1%
CONTINGENCY JOB (N=13)	*	Mobility/Contingency Personnel Cluster (N=17)	1%
-		Overseas Defense Communications Service Technical Control Cluster (N=28)	2%
-		DCS Automated Technical Control IJT (N=14)	1%
-		Control Test Facility Cable Repair Personnel IJT (N=5)	*
-		Performance Monitors and Evaluations Personnel Cluster (N=52)	3%
-		Primary Control Center/Satellite Systems Personnel IJT (N=9)	1%
-		Communications Systems Administration Managers IJT (N=36)	2%
-		Systems Evaluation/Quality Assurance Personnel IJT (N=13)	1%

- Indicates no match in report
* Indicates less than 1 percent

TABLE 6

DISTRIBUTION OF DAFSC 3C2X1 GROUP MEMBERS ACROSS SPECIALTY JOBS
(PERCENT)

SPECIALTY JOBS	DAFSC 3C231 (N=283)	DAFSC 3C251 (N=807)	DAFSC 3C271 (N=344)	DAFSC 3C291/3C200 (N=31)
I. BASE CENTRAL TEST FACILITY CLUSTER (N=153)	12%	13%	5%	-
II. SYSTEMS CONTROLLER CLUSTER (N=529)	51%	43%	12%	-
III. NCOIC JOB (N=148)	1%	9%	22%	3%
IV. AUTODIN TECHNICAL CONTROLLER JOB (N=37)	3%	3%	1%	-
V. COMBAT COMMUNICATIONS CONTROLLER CLUSTER (N=101)	10%	5%	9%	-
VI. SPACE COMMUNICATIONS SYSTEMS CONTROLLER JOB (N=19)	2%	2%	-	-
VII. MANAGEMENT CLUSTER (N=168)	1%	5%	29%	77%
VIII. TRAINING CLUSTER (N=36)	*	3%	3%	3%
IX. CONTINGENCY JOB (N=13)	1%	*	2%	-
NOT GROUPED (N=261)	19%	17%	17%	17%

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 7

AVERAGE PERCENT TIME SPENT PERFORMING DUTIES BY DAFSC 3C2X1 GROUPS
(RELATIVE PERCENT OF JOB TIME)

DUTIES	3C231 (N=283)	3C251 (N=801)	3C271 (N=344)	3C291/3C200 (N=31)
A. ORGANIZING AND PLANNING	2%	5%	13%	26%
B DIRECTING AND IMPLEMENTING	3%	8%	14%	24%
C. INSPECTING AND EVALUATING	1%	2%	7%	17%
D. TRAINING	2%	6%	7%	4%
E. PERFORMING ADMINISTRATIVE FUNCTIONS	9%	12%	18%	19%
F. PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS CONTROL FUNCTIONS	15%	13%	10%	5%
G. PERFORMING CIRCUIT MONITORING AND ANALYSIS	21%	17%	9%	*
H. PERFORMING WIDEBAND SYSTEMS PERFORMANCE MONITORING AND ANALYSIS	3%	3%	1%	2%
I. MAINTAINING TELECOMMUNICATIONS SERVICE	36%	30%	16%	2%
J. ERECTING AND MAINTAINING TACTICAL AND COMBAT COMMUNICATIONS EQUIPMENT AND FACILITIES	5%	2%	2%	-
K. PERFORMING MOBILITY FUNCTIONS	3%	2%	3%	1%
L. PERFORMING PRIMARY CONTROL CENTER AND DEFENSE SATELLITE COMMUNICATIONS SYSTEMS FUNCTIONS	1%	*	*	-

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

Skill-Level Descriptions

Another way to illustrate these skill-level descriptions, as previously done with job descriptions, is to summarize tasks performed into groups of tasks (TMs). This allows for a very concise display of where skill-level groups spend most of their time and thus develops a comprehensive overview of each skill-level group. These modules can provide training personnel with groups of tasks on which to focus resident training and upgrade training to journeyman or craftsman. The display shows the number of tasks included in a module, the percent time spent on tasks in that module, and an average percent members performing the particular TM. These modules were identified through CODAP coperformance clustering, which presents the average probability that if you perform one task you also perform a second task or a group of related tasks. The probabilities are calculated based on the actual coperformance of tasks by respondents in this survey sample. Representative TMs are listed as part of the skill-level descriptions. The list of modules with respective tasks is presented in Appendix B.

DAFSC 3C231. The 283 airmen in this 3-skill level (representing 19 percent of the survey sample), perform an average of only 76 tasks, with 74 tasks accounting for over 50 percent of their relative job time. Performing a highly technical job, 81 percent of their relative duty time is devoted to core AFSC-specific technical duties covering general communications-computer systems control activities. Table 8 displays representative time-consuming tasks performed by the highest percentages of these airmen.

Representative TMs for this 3-skill level group include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0035	systems control - fault isolation/patching	19	19	61
0037	circuit and system testing - quality control	13	6	43

These TMs indicate the scope of 3-skill level members' activities and provide emphasis and direction for training, or as a minimum, a starting point for resident training; concentrating on fault isolation and the quality control of communications-computer systems.

DAFSC 3C251. The 807 airmen in this 5-skill level group (53 percent of the survey sample) perform an average of 91 tasks, with 88 tasks accounting for over half of their relative job time. Performing a highly technical job, 61 percent of their relative job time is devoted to duties covering general communications-computer systems control activities (see Table 7). Tasks involving administrative functions accounted for an additional 12 percent of their relative job time.

TABLE 8
REPRESENTATIVE TASKS PERFORMED BY
DAFSC 3C231 PERSONNEL
(N=283)

TASKS		PERCENT MEMBERS PERFORMING
F157	Coordinate circuit and system outages with users or associated facilities	75
I425	Perform digital circuit loop-backs	73
E142	Perform general housekeeping duties	72
G252	Perform bit error rate tests on digital circuits or equipment	71
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	70
I426	Perform equipment loop-backs	70
I420	Perform audio channel loop-backs	69
I427	Perform fault isolation on analog circuits	66
I430	Perform fault isolation on circuits using analog patch bays	66
I436	Perform fault isolation on digital circuits	64
I431	Perform fault isolation on circuits using digital patch bays	64
I419	Patch digital lines	60
I418	Patch digital equipment	60
E140	Participate in alerts or recalls	58
I442	Perform fault isolation on modems	56
I380	Coordinate circuit or equipment problems with other technical controls or communications facilities	55
I417	Patch audio lines	53
G263	Perform idle channel noise tests	53
G264	Perform impulse noise tests	53
F159	Coordinate maintenance dispatch for user equipment problems with job control or contract maintenance	53
G253	Perform bit error rate tests on modems	51

Average number of tasks performed = 76

Table 9 displays representative tasks performed by the highest percentages of these airmen. Table 10 displays those tasks which reflect differences between the 3-skill level and 5-skill level groups. A review of the tasks performed reveals that 5-skill level airmen perform virtually the same technical tasks as do the 3-skill level members. However, the 3-skill level members perform these tasks to a slightly higher percentage. Most 5-skill level members indicate they perform some management or supervisory functions, although to a limited degree.

Representative TMs for this 5-skill level group include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0035	systems control - fault isolation/patching	19	15	59
0037	circuit and system testing - quality control	13	5	41

These TMs indicate the scope of 5-skill level members' activities and provide emphasis and direction for training or as a minimum a starting point for upgrade training to journeyman; concentrating on fault isolation and the quality control of communications-computer systems (same TMs as for the 3-skill level group).

DAFSC 3C271. The 344 NCOs in this 7-skill level group (23 percent of the survey sample) perform an average of 99 tasks, with 83 tasks accounting for over 50 percent of their relative job time. Forty-two percent of their relative job time is spent on the usual supervisory, management, and training duties (see Table 7). While the display of tasks in Table 11 clearly shows supervisory responsibilities, it also reflects the range and scope of the job, in that these 7-skill level members are still spending 58 percent of their relative job time performing a variety of routine communications-computer systems control technical tasks. Table 12 displays those tasks which more clearly differentiate the difference between the 5-skill level and 7-skill level groups and also reflects the supervisory responsibilities incumbent to the 7-skill level population. Top tasks performed by 5-skill levels are technical in nature, whereas top tasks performed by 7-skill levels cover non-AFSC-specific functions concentrating on the supervisory and management functions.

Representative TMs for this 7-skill level group include:

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 3C251 PERSONNEL
(N=807)

TASKS		PERCENT MEMBERS PERFORMING
F157	Coordinate circuit and system outages with users or associated facilities	74
E142	Perform general housekeeping duties	71
G252	Perform bit error rate tests on digital circuits or equipment	69
I425	Perform digital circuit loop-backs	66
I426	Perform equipment loop-backs	66
I427	Perform fault isolation on analog circuits	65
E140	Participate in alerts or recalls	65
B39	Direct fault isolation or correction of circuit or system malfunctions	64
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	63
I430	Perform fault isolation on circuits using analog patch bays	62
I442	Perform fault isolation on modems	62
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	62
I436	Perform fault isolation on digital circuits	62
I420	Perform audio channel loop-backs	61
I431	Perform fault isolation on circuits using digital patch bays	60
F159	Coordinate maintenance dispatch for user equipment problems with job control or contract maintenance	59
I418	Patch digital equipment	57
I419	Patch digital lines	57
I417	Patch audio lines	56
I380	Coordinate circuit or equipment problems with other technical controls or communications facilities	54
E155	Type forms, reports, or correspondence	53
D86	Conduct OJT	53
G253	Perform bit error rate tests on modems	53
I416	Patch audio equipment	52
G263	Perform idle channel noise tests	51

Average number of tasks performed = 91

TABLE 10

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 3C231 AND DAFSC 3C251 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3C231 (N=283)	3C251 (N=807)	DIFFERENCE
J498	Check continuity between local technical control and users	33	20	13
J497	Check continuity between local and distant technical controls	32	20	12
F181	Maintain or prepare automated or manual DD Forms 1445 (Technical Control Communications Work Order)	47	37	10
J499	Check continuity of cables or in-house wiring	29	20	9
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	70	62	8
I420	Perform audio channel loop-backs	69	61	8
F179	Maintain or prepare automated or manual DD Forms 1443 (Trouble and Restoration Record)	43	36	7
I425	Perform digital circuit loop-backs	73	66	7
I401	Load or rekey cryptographic material	44	37	7
G266	Perform in-service QCs of voice circuit speech levels	37	30	7
B36	Counsel personnel	5	44	-39
C81	Write EPRs	3	39	-36
B58	Supervise Communications-Computer Systems Control Specialists (AFSC 49350)	5	35	-30
A3	Determine work priorities	18	47	-29
D89	Counsel trainees on training progress	8	37	-29
D86	Conduct OJT	25	53	-28
E116	Draft correspondence	3	27	-24
E151	Process forms, reports, or correspondence using word processors	20	44	-24
B37	Direct circuit or system checks	23	46	-23
B51	Interpret policies, directives, or procedures for subordinates	6	29	-23

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 3C271 PERSONNEL
(N=344)

TASKS		PERCENT MEMBERS PERFORMING
A3	Determine work priorities	79
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	72
E116	Draft correspondence	71
E155	Type forms, reports, or correspondence	69
B36	Counsel personnel	68
C81	Write EPRs	66
E151	Process forms, reports, or correspondence using word processors	66
E142	Perform general housekeeping duties	64
A6	Develop work procedures	63
E140	Participate in alerts or recalls	62
B29	Conduct briefings	62
B39	Direct fault isolation or correction of circuit or system malfunctions	60
B49	Indoctrinate newly assigned personnel	60
B51	Interpret policies, directives, or procedures for subordinates	59
B54	Prepare recommendations for awards or decorations	59
A28	Schedule leaves, passes, or temporary duty (TDY)	59
B58	Supervise Communications-Computer Systems Control Specialists (AFSC 49350)	56
A24	Plan work assignments	54
A19	Identify requirements for space, personnel, equipment, or supplies	52
A14	Establish performance standards for subordinates	52
A17	Establish standing operating procedures (SOPs) and operating instructions (OIs)	51
F157	Coordinate circuit and system outages with users or associated facilities	51
A1	Assign personnel to duty positions	51

Average number of tasks performed = 99

TABLE 12

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 3C251 AND DAFSC 3C271 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3C251 (N=807)	3C271 (N=344)	DIFFERENCE
G252	Perform bit error rate tests on digital circuits or ezsquipment	69	43	26
G264	Perform impulse noise tests	49	24	25
I427	Perform fault isolation on analog circuits	65	41	24
I425	Perform digital circuit loop-backs	66	43	23
I420	Perform audio channel loop-backs	61	38	23
F159	Coordinate maintenance dispatch for user equipment problems job control or contract maintenance with job control or contract maintenance	60	37	23
F157	Coordinate circuit and system outages with users or associated facilities	73	51	22
G279	Perform maximum change in audio frequency tests	40	18	22
G259	Perform envelope delay distortion tests	43	21	22
I430	Perform fault isolation on circuits using analog patch bays	62	41	21
E116	Draft correspondence	27	71	-44
A28	Schedule leaves, passes, or temporary duty (TDY)	17	59	-42
B60	Supervise Communications-Computer Systems Control Technicians (AFSC 49370)	4	43	-39
B54	Prepare recommendations for awards or decorations	21	59	-38
A19	Identify requirements for space, personnel, equipment, or supplies	16	52	-36
A17	Establish standing operating procedures (SOPs) and operating instructions (OIs)	16	51	-35
A1	Assign personnel to duty positions	16	51	-35
A25	Prepare job descriptions	8	41	-33
B29	Conduct briefings	30	62	-32
A2	Assign sponsors for newly assigned personnel	9	41	-32

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0034	supervision	6	8	68
0021	supervision - management	24	14	47

These TMs indicate the scope of 7-skill members' activities and provide emphasis and direction for training or as a minimum a starting point for upgrade training to craftsman, concentrating on both general and specific supervisory and management activities, as they apply to communications-computer systems control.

DAFSC 3C291/CEMs. The 31 senior NCOs in this 9-skill level/CEM group (2 percent of the survey sample) perform an average of 53 tasks, with 30 tasks accounting for over 50 percent of their relative job time. Table 7 shows that 71 percent of their relative job time is spent in the supervisory, management, and training duties (i.e., Duties A,B,C,D). An additional 19 percent of their relative job time is spent performing administrative functions. Table 13 clearly shows the breadth of supervisory and management functions that these 9-skill level and CEMs perform. It also reflects that these senior NCOs perform limited technical AFSC-specific tasks (accounting for only 10 percent of their relative job time). Table 14 displays those tasks which clearly show the differences between the 7-skill level and the 9-skill level/CEM groups and also reflects the upper-level management responsibilities incumbent to the 9-skill levels/CEMs.

Representative TMs for this 9-skill level/CEM group include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0034	supervision	6	15	73
0019	supervision - budget/requirements	7	10	61
0021	supervision - management	24	28	60

These TMs indicate the emphasis of 9-skill/CEMs on performance of supervisory and upper-level management responsibilities.

TABLE 13

REPRESENTATIVE TASKS PERFORMED BY
DAFSC 3C291/3C200 PERSONNEL
(N=31)

TASKS		PERCENT MEMBERS PERFORMING
A3	Determine work priorities	87
E116	Draft correspondence	84
B29	Conduct briefings	77
A28	Schedule leaves, passes, or temporary duty (TDY)	77
A9	Draft recommendations for system improvements	74
C82	Write staff studies, surveys, or special reports	74
A25	Prepare job descriptions	74
C81	Write EPRs	71
B54	Prepare recommendations for awards or decorations	71
B36	Counsel personnel	71
A1	Assign personnel to duty positions	71
B51	Interpret policies, directives, or procedures for subordinates	68
A8	Draft budget requirements	68
A19	Identify requirements for space, personnel, equipment, or supplies	68
B49	Indoctrinate newly assigned personnel	68
A6	Develop work procedures	65
B60	Supervise Communications-Computer Systems Control Technicians (AFSC 49370)	65
E112	Conduct facility familiarization visits	65
C67	Evaluate inspection reports or procedures	65
E151	Process forms, reports, or correspondence using word processors	61
E155	Type forms, reports, or correspondence	61
B30	Conduct staff meetings	61
C75	Indorse enlisted performance reports (EPRs)	61
A24	Plan work assignments	61
E140	Participate in alerts or recalls	61

Average number of tasks performed = 53

TABLE 14

TASKS WHICH BEST DIFFERENTIATE BETWEEN DAFSC 3C271 AND
DAFSC 3C291/3C200 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASKS		3C271 (N=344)	3C291/3C200 (N=31)	DIFFERENCE
F157	Coordinate circuit and system outages with users or associated facilities	51	10	41
I442	Perform fault isolation on modems	43	3	40
I436	Perform fault isolation on digital circuits	41	3	38
G252	Perform bit error rate tests on digital circuits or equipment	43	6	37
I419	Patch digital lines	39	3	36
I417	Patch audio lines	39	3	36
E142	Perform general housekeeping duties	64	29	35
I377	Configure modems	38	3	35
I421	Perform continuity checks on cross-connections	35	0	35
I427	Perform fault isolation on analog circuits	41	6	35
C82	Write staff studies, surveys, or special reports	38	74	-36
A8	Draft budget requirements	31	68	-37
C75	Indorse enlisted performance reports (EPRs)	28	61	-33
A25	Prepare job descriptions	41	74	-33
B30	Conduct staff meetings	29	61	-32
B50	Initiate personnel action requests	31	61	-30
A9	Draft recommendations for system improvements	45	74	-29
C67	Evaluate inspection reports or procedures	38	65	-27
A4	Develop organizational charts	30	55	-25
C68	Evaluate job descriptions	38	61	-23

Summary

Three-skill level and 5-skill level airmen perform many tasks in common, and both groups spend the vast majority of their relative job time on technical AFSC-specific communications-computer systems control tasks. The 5-skill level group, while performing the technical part of their job, perform some supervisory and management tasks. At the 7-skill level, although members still perform a substantial amount of routine day-to-day technical communications-computer systems control activities, a shift toward supervisory functions is evident. The 9-skill level/CEM group reflects the domination of supervisory and management activities in a typical 9-skill levels' or CEMs' day.

ANALYSIS OF AFMAN 36-2108 SPECIALTY DESCRIPTIONS

Survey data were compared to the AFMAN 36-2108 Specialty Descriptions for Communications-Computer Systems Control Specialist, Communications-Computer Systems Control Technician, and Communications-Computer Systems Control Superintendent all dated 30 April 1991.

The 3-/5-skill level specialty description appears complete and accurately portrays the range and technical nature of the job. The description for the craftsman (AFSC 3C271) accurately reflects both the supervisory and the previously discussed technical nature of job. The 9-skill level/CEM specialty description accurately reflects the dominance of supervisory and management activities performed by these members.

ANALYSIS OF MAJCOMS

Tasks and background data for personnel of the 10 MAJCOMs with the largest AFSC 3C2X1 populations were compared to determine whether job content varied as a function of command assignment.

Generally, the jobs performed across the commands were similar, with many tasks performed in common. The largest percentage of relative job time in each command is committed to tasks covering the maintenance of telecommunications service, performance of circuit monitoring and analysis, and performance of general communications-computer systems control functions (see Table 15). Minor variations were noted, with ACC reporting comparatively more time on erecting and maintaining tactical and combat communications equipment and facilities, and performing mobility functions.

TABLE 15

PERCENTAGE OF TIME SPENT ON DUTIES BY MAJCOM GROUPS

TASKS	USAFE (N=278)	ACC (N=275)	SPACECOM (N=171)	PACAF (N=142)	AMC (N=133)
A. ORGANIZING AND PLANNING	6%	6%	5%	7%	6%
B. DIRECTING AND IMPLEMENTING	9%	8%	8%	9%	8%
C. INSPECTING AND EVALUATING	3%	3%	3%	3%	6%
D. TRAINING	4%	4%	5%	5%	3%
E. PERFORMING ADMINISTRATIVE FUNCTIONS	12%	13%	13%	12%	11%
F. PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS CONTROL FUNCTIONS	15%	11%	13%	12%	15%
G. PERFORMING CIRCUIT MONITORING AND ANALYSIS	18%	12%	18%	17%	17%
H. PERFORMING WIDEBAND SYSTEMS PERFORMANCE MONITORING AND ANALYSIS	3%	1%	3%	2%	2%
I. MAINTAINING TELECOMMUNICATIONS SERVICE	27%	25%	30%	26%	28%
J. ERECTING AND MAINTAINING TACTICAL AND COMBAT COMMUNICATIONS EQUIPMENT AND FACILITIES	1%	9%	1%	4%	1%
K. PERFORMING MOBILITY FUNCTIONS	1%	8%	*	3%	*
L. PERFORMING PRIMARY CONTROL CENTER AND DEFENSE SATELLITE COMMUNICATIONS SYSTEMS FUNCTIONS	*	*	*	1%	2%

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TABLE 15 (CONTINUED)

PERCENTAGE OF TIME SPENT ON DUTIES BY MAJCOM GROUPS

TASKS	AFMC (N=118)	AFIC (N=73)	ELEM OTHER (N=66)	AETC (N=63)	7TH CG (N=42)
A. ORGANIZING AND PLANNING	7%	6%	12%	7%	5%
B. DIRECTING AND IMPLEMENTING	9%	8%	13%	7%	8%
C. INSPECTING AND EVALUATING	3%	2%	4%	3%	3%
D. TRAINING	6%	4%	3%	19%	4%
E. PERFORMING ADMINISTRATIVE FUNCTIONS	11%	12%	15%	16%	9%
F. PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS CONTROL FUNCTIONS	14%	17%	10%	9%	12%
G. PERFORMING CIRCUIT MONITORING AND ANALYSIS	16%	16%	13%	13%	18%
H. PERFORMING WIDEBAND SYSTEMS PERFORMANCE MONITORING AND ANALYSIS	2%	2%	2%	3%	4%
I. MAINTAINING TELECOMMUNICATIONS SERVICE	29%	31%	24%	22%	35%
J. ERECTING AND MAINTAINING TACTICAL AND COMBAT COMMUNICATIONS EQUIPMENT AND FACILITIES	1%	1%	1%	1%	1%
K. PERFORMING MOBILITY FUNCTIONS	1%	*	1%	1%	*
L. PERFORMING PRIMARY CONTROL CENTER AND DEFENSE SATELLITE COMMUNICATIONS SYSTEMS FUNCTIONS	*	*	2%	*	*

* Less than 1 percent

NOTE: Columns may not add to 100 percent due to rounding

TRAINING ANALYSIS

One of the many sources of information which can be used to assist in the development of a training program relevant to the needs of personnel in their first enlistment is the OSR. Factors which may be used in evaluating training include the overall description of the job being performed by first-enlistment personnel, and their overall distribution across career ladder jobs, percentages of first-job (1-24 months' TAFMS) or first-enlistment (1-48 months' TAFMS) members performing specific tasks or using certain equipment or tools, as well as TE and TD ratings (previously explained in the **SURVEY METHODOLOGY** section).

To assist specifically in evaluation of the Specialty Training Standard (STS) and the Plan of Instruction (POI), technical school personnel from the 81st Training Wing matched JI tasks to appropriate sections and subsections of the STS and the POI for Course 3ABR49330 dated 20 December 1991. It was this matching upon which comparison to those documents was based. A complete computer listing displaying the percent members performing tasks, TE and TD ratings for each task, along with the STS and POI matchings, has been forwarded to the technical school for their use in further detailed reviews of appropriate training documents. A summary of this information is presented below.

First-Enlistment Personnel

In this study, there are 404 members in their first enlistment (1-48 months' TAFMS), representing over 28 percent of the total survey sample. The job performed by these personnel is highly technical in nature, accounting for approximately 96 percent of their relative duty time (see Table 16). While Table 16 shows that first-enlistment airmen are involved in communications-computer systems control activities, it is clear that the largest percentage of their job time is spent maintaining telecommunication service and performing circuit monitoring and analysis activities. Distribution of these personnel across the career ladder jobs is displayed in Figure 2, which also displays that the vast majority of first-enlistment airmen are included in the BCTF and Systems Controller clusters. Table 17 displays some of the average 79 tasks performed by this group and reflects general telecommunication service, and circuit monitoring and analysis activities.

Representative TMs for this first-enlistment group include:

TM	Module Title	No. of Tasks	Percent Time Spent Sum	Avg Pct Mbrs Perf
0035	systems control - fault isolation/patching	19	19	63
0037	circuit and system testing quality control	13	6	45
0036	technical controller - analog/digital patch bays	6	3	40

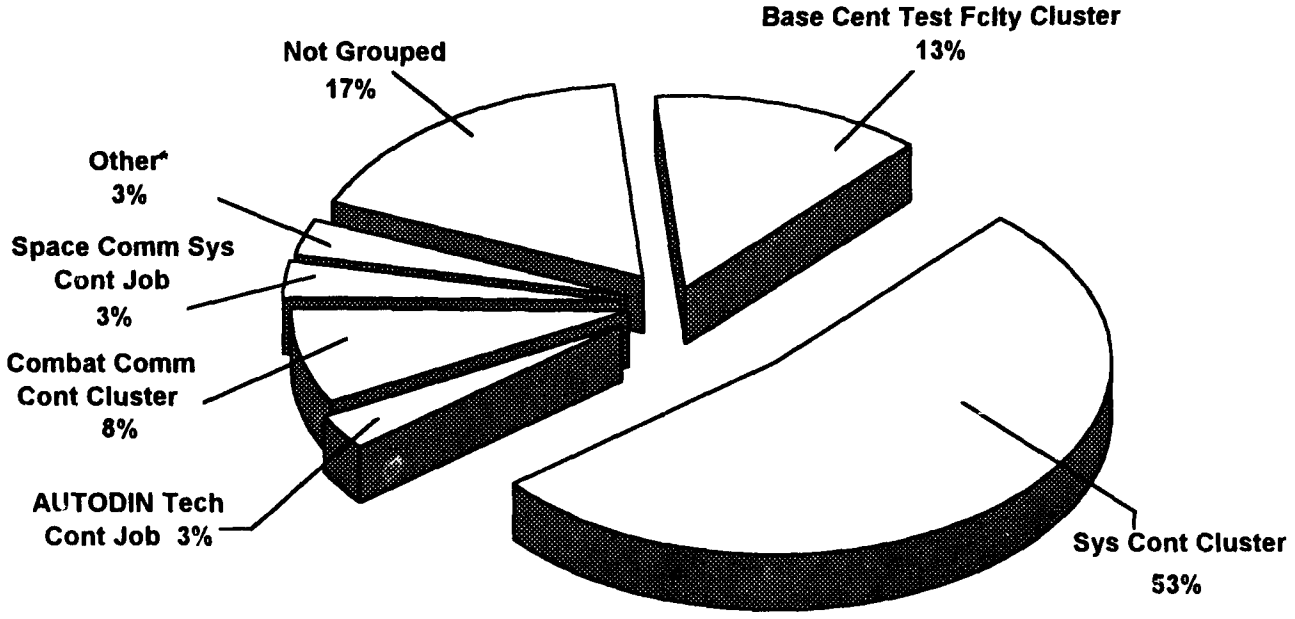
TABLE 16

RELATIVE PERCENT OF TIME SPENT ACROSS DUTIES
BY FIRST-ENLISTMENT PERSONNEL

TASKS		PERCENT TIME SPENT
A.	ORGANIZING AND PLANNING	2%
B.	DIRECTING AND IMPLEMENTING	3%
C.	INSPECTING AND EVALUATING	1%
D.	TRAINING	2%
E.	PERFORMING ADMINISTRATIVE FUNCTIONS	9%
F.	PERFORMING GENERAL COMMUNICATIONS-COMPUTER SYSTEMS CONTROL FUNCTIONS	15%
G.	PERFORMING CIRCUIT MONITORING AND ANALYSIS	21%
H.	PERFORMING WIDEBAND SYSTEMS PERFORMANCE MONITORING AND ANALYSIS	3%
I.	MAINTAINING TELECOMMUNICATIONS SERVICE	36%
J.	ERECTING AND MAINTAINING TACTICAL AND COMBAT COMMUNICATIONS EQUIPMENT AND FACILITIES	5%
K.	PERFORMING MOBILITY FUNCTIONS	3%
L.	PERFORMING PRIMARY CONTROL CENTER AND DEFENSE SATELLITE COMMUNICATIONS SYSTEMS FUNCTIONS	1%

NOTE: Columns may not add to 100 percent due to rounding

DISTRIBUTION OF AFSC 3C2X1 FIRST-ENLISTMENT PERSONNEL ACROSS CAREER LADDER JOBS (N=404)



*Includes:
Management Cluster 1%
Training Cluster 1%
Contingency Job 1%

FIGURE 2

TABLE 17

REPRESENTATIVE TASKS PERFORMED BY
FIRST-ENLISTMENT PERSONNEL

TASKS		PERCENT MEMBERS PERFORMING (N=404)
F157	Coordinate circuit and system outages with users or associated facilities	76
I425	Perform digital circuit loop-backs	74
G252	Perform bit error rate tests on digital circuits or equipment	73
E142	Perform general housekeeping duties	72
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	71
I426	Perform equipment loop-backs	70
I420	Perform audio channel loop-backs	69
I430	Perform fault isolation on circuits using analog patch bays	68
I436	Perform fault isolation on digital circuits	68
I427	Perform fault isolation on analog circuits	66
I431	Perform fault isolation on circuits using digital patch bays	66
I419	Patch digital lines	62
I418	Patch digital equipment	62
E140	Participate in alerts or recalls	60
F159	Coordinate maintenance dispatch for user equipment problems with job control or contract maintenance	59
I442	Perform fault isolation on modems	58
I417	Patch audio lines	57
I380	Coordinate circuit or equipment problems with other technical controls or communications facilities	57
G264	Perform impulse noise tests	54
G263	Perform idle channel noise tests	53
I416	Patch audio equipment	52
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	51
G253	Perform bit error rate tests on modems	50

Average number or tasks performed = 79

These TMs indicate the scope of first-enlistment members' activities and provide emphasis and direction for training or at least a starting point for resident training.

One of the objectives of this survey project was to gather data for the training center pertaining to various types of test equipment and support equipment used or operated by communications-computer systems control personnel. Accordingly, Tables 18 and 19 present percentages of first-enlistment airmen responding to questions concerning their activities involving these items. This type of information is useful for both school and MAJCOM training personnel to assist them in focusing limited training time or other resources on the most utilized items.

TE and TD Data

TE and TD data are secondary factors that can assist technical school personnel in deciding which tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior career ladder NCOs working at operational units in the field, are collected to provide training personnel with a rank ordering of those tasks in the JI considered important for first-enlistment personnel training (TE) (see Table 20 for the top-rated tasks), along with a measure of the difficulty of the JI tasks (TD) (see the highest rated tasks presented in Table 21). A total of 136 tasks were rated high in TE (i.e., having a TE rating of over 4.29) with 53 percent of these tasks matched to the STS. Those tasks rated high in TE include performing fault isolation on circuits, performing tests to measure circuit and system characteristics, and patching and adjusting activities. Although these tasks are rated high in TE and viewed as necessary for training of first-enlistment personnel, these tasks are for the most part not viewed as difficult to learn. Tasks rated high in TD involve the complex supervisory and management activities. Technical tasks receiving high TD ratings involve engineering networks or communications systems, and performing fault isolation of communications-computer systems. When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can then be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors, accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best omitted from training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks.

To assist technical school personnel, the Air Force Occupational Measurement Squadron has developed a computer program that incorporates these secondary factors and the percentage of first-enlistment personnel performing each task to produce an Automated Training Indicator (ATI) for each task. These indicators correspond to training decisions listed and defined in the Training Decision Logic Table found in Attachment 1, AETCR 52-22, and allow course personnel to quickly focus their attention on those tasks which are most likely to qualify for ABR course consideration.

TABLE 18

TEST EQUIPMENT ITEMS USED BY 30 PERCENT OR MORE OF FIRST-JOB OR FIRST-ENLISTMENT PERSONNEL

TEST EQUIPMENT	PERCENT MEMBERS PERFORMING 1ST JOB (N=134)	1ST ENL (N=404)
Oscilloscopes	78	77
Measuring Sets, Level	74	74
Test Sets, Bit Error Rate	67	72
Measuring Sets, Noise	60	62
Meters, Decibel (db)	59	59
Multimeters	57	54
Speakers	54	55
Fireberd 6000 Digital Testers/Generators	51	55
Measuring Sets, Envelope Delay	51	54
Measuring Sets, Phase Jitter	51	51
Built-In Test Equipment	50	47
Pattern Generators, Digital	42	42
Signal Generators, Audio Frequency	42	43
Data Scopes	40	41
Analyzers, Protocol	38	45
Breakout Boxes	38	43
Counters, Impulse Noise	37	42
Measuring Sets, Low Freq Selective Level	37	35
Pattern Generators, Test	37	40
Ohmmeters	35	35
Counters, Frequency	32	32
Attenuators	31	33
Analyzers, Digital	30	36
Test Sets, Heikimian (Manual)	29	34

TABLE 19

SUPPORT EQUIPMENT ITEMS USED BY 30 PERCENT
OR MORE OF FIRST-JOB OR FIRST-ENLISTMENT PERSONNEL

SUPPORT EQUIPMENT	PERCENT MEMBERS PERFORMING	
	1ST JOB (N=134)	1ST ENL (N=404)
Data Modems	75	76
Distribution Frames	58	60
Pads & Amplifiers	57	55
Computer Terminals	54	61
Printers, Computer	54	55
Multiplexers, AN/FCC-100	52	46
Patch Bays, Black Digital	52	63
Crypto Equip other than Bulk Encryp	51	50
Computers, Zenith 248, 386, or 486	50	51
Timing Devices, Master Station Clock	49	41
Alarm Systems	47	43
Patch Bays, Circuit	47	55
Patch Panels, Bantam 2 + 3	46	50
Bulk Encryption Units	44	43
Fiber Optic Equipment	42	45
Signaling Units	41	37
Patch Bays, Red Digital	40	47
Patch Bays, Voice Frequency	40	43
DDN Hardware	39	42
Multiplexers, AN/FCC-98	39	33
Converters, Analog-to-Digital	36	37
Power Supplies	36	40
TDM Equip other than CODEX	35	41
Four-wire Terminating Sets	31	33
Timing Devices, Digital Clock Source	31	27
PCM Equipment	28	31

TABLE 20

TECHNICAL TASKS RATED HIGHEST IN TRAINING EMPHASIS (TE)
BY AFSC 3C2X1 PERSONNEL

TASKS		TNG EMP*	PERCENT MEMBERS PERFORMING 1ST JOB (N=134)	1ST ENL (N=404)	TASK DIFF**
G252	Perform bit error rate tests on digital circuits or equipment	6.58	72	73	5.34
I436	Perform fault isolation on digital circuits	6.46	60	68	6.02
G253	Perform bit error rate tests on modems	6.42	47	50	5.06
I419	Patch digital lines	6.42	53	62	3.90
I431	Perform fault isolation on circuits using digital patch bays	6.42	57	66	5.40
I418	Patch digital equipment	6.42	54	62	4.04
I430	Perform fault isolation on circuits using analog patch bays	6.31	58	68	5.22
I408	Operate computer diagnostic equipment, such as data scopes or protocol analyzers	6.31	36	43	6.61
I417	Patch audio lines	6.29	45	57	3.73
I416	h audio equipment	6.29	44	52	3.89
I427	orm fault isolation on analog circuits	6.04	60	67	5.32
G254	Perform bit error rate tests on quasi-analog circuits	6.00	18	20	5.32

* TE MEAN = 2.75 S.D. = 1.54 (High TE >= 4.29)
** TD MEAN = 5.00 S.D. = 1.00

TABLE 21

TASKS RATED HIGHEST IN TASK DIFFICULTY (TD) BY AFSC 3C2X1 PERSONNEL

TASKS		TASK DIFF*	PERCENT MEMBERS PERFORMING 1ST JOB (N=134)	1ST ENL (N=404)	DAFSC 3C251	DAFSC 3C271	TNG EMP**
A11	Engineer local area networks (LANs)	9.39	3	3	7	15	1.19
A10	Engineer communications circuits or systems	8.79	3	9	20	41	1.21
I398	Install LANs	8.12	8	7	10	11	2.44
D93	Develop resident course or career development course (CDC) curriculum materials	7.88	1	0	1	3	.40
I453	Perform fiber optic cable maintenance, such as splicing, connecting, or installing	7.61	3	3	5	6	2.90
G231	Detect protocol errors in each layer, such as link or transport	7.55	0	5	9	12	4.77
A9	Draft recommendations for system improvements	7.53	2	5	15	45	.85
A7	Develop working agreements with using agencies or host bases	7.36	4	5	9	33	.73
I490	Write databases for automated technical control consoles	7.34	6	7	5	6	1.69
A20	Plan layouts of facilities	7.25	1	3	8	30	.58
A8	Draft budget requirements	7.25	0	1	5	31	.42
A27	Prepare unit emergency or contingency plans	7.20	1	1	5	20	.75

* TD MEAN = 5.00 S.D. = 1.00

** TE MEAN = 2.75 S.D. = 1.54 (High TE >= 4.29)

Various lists of tasks, accompanied by TE and TD ratings, and where appropriate, ATI information, are contained in the TRAINING EXTRACT package and should be reviewed in detail by technical school personnel. (For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the **SURVEY METHODOLOGY** section of this report.)

Specialty Training Standard (STS)

A comprehensive review of STS 3C2X1, dated April 1993, compared STS items to survey data (based on the previously mentioned assistance from technical school personnel in matching JI tasks to STS elements). STS paragraphs containing general knowledge information, mandatory entries, subject-matter-knowledge-only requirements, or basic supervisory responsibilities were not examined. Task knowledge, performance elements, and dashed/"-" entries of the STS were compared against the standard set forth in AETCR 52-22, paragraph 3B, (i.e., include tasks performed or knowledge required by 20 percent or more of the personnel in a skill level (criterion group) of the AFS).

Using this criterion, a substantial portion of the STS was found to be unsupported by occupational survey data. The number of STS entries that did not meet the minimum 20 percent criterion were too numerous to discuss in detail; 76 out of 105 entries did not meet the 20 percent members performing, by any criterion group. Of the 76 entries that did not meet the 20 percent criterion, 14 entries may be justified for retention based on high TE ratings. A few selected STS entries are presented in Table 22 to display the scope of unsupported STS entries. Even though some elements did not have high percentages of personnel performing matched tasks, the fact that the supporting tasks were part of an identifiable job being performed in the career ladder supports the retention of the STS element involving those tasks.

The large number of unsupported STS elements is largely due to the diversity of the career ladder. When an AFS population is spread across a large number of distinctly different jobs, very few tasks are performed in common across those jobs. For example, in this AFS, based on task performance responses, the job done by airmen working in tactical and combat communications equipment and facility maintenance and mobility functions has very little in common with the job performed by respondents in primary control center and Defense Satellite Communications Systems functions. Consequently, when applying the usual standards against elements of the STS, many elements do not measure up.

Tasks not matched to any entry of the STS are listed at the end of the STS computer listing. These were reviewed to determine if there were any tasks concentrated around any particular functions or jobs. No particular trends were noted. Examples of technical tasks performed by 20 percent or more respondents of the STS target groups, but which were not referenced to any STS element, are displayed in Table 23. Training personnel and SMEs should review these and other eligible unreferenced tasks to determine if inclusion in the STS is justified.

TABLE 22

EXAMPLES OF STS ELEMENTS NOT SUPPORTED BY SURVEY DATA
(LESS THAN 20 PERCENT MEMBERS PERFORMING)

STS ITEMS (with selected matched tasks)	3LVL COURSE PROF CODE	TNG EMP*	PERCENT MEMBERS PERFORMING 1ST ENL (N=404)	DAFSC 3C251 (N=807)	DAFSC 3C271 (N=344)	TASK DIFF**
11c.Determine the best operating frequency	-					
I388 Determine optimum operating frequency for HF communications		3.12	7	6	6	5.62
16f(2)(a). Analyze circuit performance	-					
H334 Analyze performance data to detect degrading trends		4.02	7	12	16	5.36
F208 Maintain or prepare trend analysis files systems		2.62	13	13	14	4.94
17e(11). Frame loss detection	2b					
H361 Perform frame loss detection measurements		4.33	8	8	8	5.41
17g(6).Transient voltages	2b					
G333 Test metallic line circuits for transient voltages		4.40	12	17	12	4.54
18c(1).Equalizers	b					
G214 Adjust amplitude equalizers		4.98	19	17	10	4.71
G216 Adjust delay equalizers		5.04	13	12	6	5.90

* TE MEAN = 2.75 S.D. = 1.54 (High TE >= 4.29)
** TD MEAN = 5.00 S.D. = 1.00

TABLE 23

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 20 PERCENT OR MORE AND NOT REFERENCED TO THE 3C2X1 STS

TASKS		PERCENT MEMBERS PERFORMING 1ST ENL (N=404)	DAFSC 3C251 (N=807)	DAFSC 3C271 (N=344)	TNG EMP*	TASK DIFF**
G253	Perform bit error rate tests on modems	50	53	35	6.42	5.06
I380	Coordinate circuit or equipment problems with other technical controls or communications facilities	57	55	42	5.83	4.86
I442	Perform fault isolation on modems	58	62	43	5.90	5.50
I401	Load or rekey cryptographic material	45	37	26	3.77	4.45
I409	Operate cryptographic equipment	37	32	28	4.17	4.84
I478	Remove or replace modems	35	43	29	3.52	4.47
I420	Perform audio channel loop-backs	69	61	38	5.58	3.10
I425	Perform digital circuit loop-backs	74	66	43	5.85	3.43
I426	Perform equipment loop-backs	70	66	44	5.79	3.38
G262	Perform hits and dropouts tests	36	31	18	5.75	4.28
I377	Configure modems	43	47	38	4.96	5.90
G230	Conduct acceptance testing of new systems, circuits, equipment or equipment	30	39	29	4.81	6.89
I384	Coordinate cryptographic synchronizations with distant end	37	35	19	4.44	4.32
I408	Operate computer diagnostic equipment, such as data scopes or protocol analyzers	43	41	26	6.31	6.61

* TE MEAN = 2.75 S.D. = 1.54 (High TE >= 4.29)
** TD MEAN = 5. 00 S.D. = 1.00

Plan of Instruction (POI)

Based on the previously mentioned assistance from the technical school, SMEs matching inventory tasks to the 3ABR49330 POI, dated 20 December 1991, a computer product was generated displaying the results of the matching process. Information furnished for consideration includes percent members performing data for first-job (1-24 months' TAFMS) and first-enlistment (1-48 months' TAFMS) personnel, as well as TE and TD ratings for individual tasks.

POI blocks, units of instruction, and criterion objectives were compared against the standard set forth in Attachment 1, ATCR 52-22, dated 17 February 1989 (30 percent or more of the criterion first-enlistment group performing tasks trained, along with sufficiently high TE and TD ratings on those tasks). Per this guidance, tasks trained in the course which do not meet these criteria should be considered for elimination from the formal course, if not justified on some other acceptable basis.

Review of the tasks matched to the POI reveals 40 of the 48 POI objectives did not meet the 30 percent members performing, by any criterion group. Of the 40 POI elements that did not meet the 30 percent criteria, 20 POI elements may be justified for retention based on high TE ratings. Examples of supported areas include metallic line troubleshooting, performing error rate tests, and fault isolation and technical control operations (see Table 24). Even though these areas are supported on the basis of the minimum percent members performing criterion, it should be noted that the vast majority of the tasks matched to these objectives reflected average or below average TD ratings. Thus, even these areas may be valid candidates for local OJT rather than consuming expensive formal course training time.

Examples of some of the units of instruction and criterion objectives with matched tasks which were not supported by survey data are presented in Table 25. The sample tasks displayed are some of those with the highest percent members performing responses. While some of these ratings do reflect high TE, it should be noted that the TD ratings are all around or less than the 5.00 average.

SMEs and training personnel should perform an in-depth review of the entire course to determine which, if any, of the units of instruction can be justified for retention. Where retention cannot be supported by survey data, alternative justification rationale for retention should be documented for future reference.

JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators of various groups can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. Questions covering job interest, perceived utilization of talents and training, sense of accomplishment from work, and reenlistment intentions were included in the

TABLE 24

EXAMPLES OF POI ELEMENTS NOT SUPPORTED BY SURVEY DATA

POI ELEMENTS (with selected matched tasks)	TNG EMP*	ATI	PERCENT MEMBERS PERFORMING 1ST JOB (N=134)	PERCENT MEMBERS PERFORMING 1ST ENL (N=404)	TASK DIFF**
III4c. Test metallic line circuits for grounds with no more than two instructor assists					
G328 Test metallic line circuits for grounds	4.38	11	14	23	4.13
III4g. Test metallic line circuits for transient voltages with no more than two instructor assists					
G333 Test metallic line circuits for transient voltages	4.40	11	6	12	4.54
IX 1h. Condition a circuit for excessive envelope delay distortion to acceptable parameters with no more than two instructor assists.					
G216 Adjust delay equalizers	5.04	11	14	13	5.90
X 1b. Identify system and circuit characterizations using eye patterns					
H365 Perform quantization distortion measurements on TDM/PCM systems	4.04	7	2	2	5.52
X 1o. Using appropriate equipment and student lab checklist, perform timing measurements IAW checklist.					
H370 Perform timing jitter measurements on TDM/systems PCM	4.62	11	6	5	5.03

* TE MEAN = 2.75 S.D. = 1.54 (High TE >= 4.29)
** TD MEAN = 5.00 S.D. = 1.00

TABLE 25

EXAMPLES OF TECHNICAL TASKS PERFORMED BY 30 PERCENT OR MORE AND NOT REFERENCED TO POI ELEMENTS

TASKS		PERCENT MEMBERS PERFORMING 1ST JOB (N=134)	1ST ENL (N=404)	ATI	TNG EMP*	TASK DIFF**
G253	Perform bit error rate tests on modems	47	50	18	6.42	5.06
I380	Coordinate circuit or equipment problems with other technical controls or communications facilities	53	57	18	5.83	4.86
I418	Patch digital equipment	60	67	18	6.42	4.04
I436	Perform fault isolation on digital circuits	60	68	18	6.46	6.02
I442	Perform fault isolation on modems	53	58	18	5.90	5.50
F159	Coordinate maintenance dispatch for user equipment problems with job control or contract maintenance	50	59	17	4.23	4.15
B39	Direct fault isolation or correction of circuit or system malfunctions	36	48	15	3.10	6.18
F158	Coordinate installations with users or associated facilities	30	33	15	3.17	4.74
F161	Coordinate scheduled downtime requests with DISA or facility control office (FCO)	27	34	15	3.92	4.49
F165	Implement activation or changes of circuits	25	31	15	3.17	5.39
I401	Load or rekey cryptographic material	46	45	15	3.77	4.45

* TE MEAN = 2.75 S.D. = 1.54 (High TE > = 4.29)

** TD MEAN = 5.00 S.D. = 1.00

survey booklet to provide indications of job satisfaction. Table 26 presents job satisfaction data for AFSC 3C2X1 TAFMS groups, together with data for a comparative sample of Direct Support career ladders surveyed in 1993. These data can give a relative measure of how the job satisfaction of AFSC 3C2X1 personnel compares with other similar Air Force specialties. An indication of how job satisfaction perceptions have changed over time is provided in Table 27, where TAFMS group data for 1994 survey respondents are presented, along with data from respondents to the last occupational survey involving this career ladder, published in 1989. Finally, Table 28 presents job satisfaction responses from personnel in the specialty jobs discussed in the **SPECIALTY JOBS** section of this report. An examination of these data can show how overall job satisfaction may be influenced by the type of job performed.

Review of Table 26 reflects that responses from AFSC 3C2X1 TAFMS groups regarding job interest, use of talents, use of training, and reenlistment intentions are all positive (58 percent or more).

Comparison of job satisfaction indicator responses of current survey TAFMS groups to those in the 1989 survey (see Table 27) indicates that current job satisfaction responses are essentially the same or on par with those in 1989. The most notable exception is the somewhat lower positive responses concerning perceived utilization of talents and of training by the current survey in both the 1-48 months' group and the 46-96 months' group.

Table 28 presents job satisfaction indicators for personnel in the **SPECIALTY JOBS** section or this report. An examination of these data can show how overall job satisfaction may be influenced by the type of job performed. Review of the job satisfaction data for the communications-computer systems control career ladder reveals generally positive responses in all of the five job satisfaction indicators.

A few jobs within this study revealed low ratings for some of the five job satisfaction indicators. Personnel in the AUTODIN Technical Controller job responded less than positively (fewer than 50 percent responding positively) to four of the five job satisfaction indicators. The only job satisfaction indicator that received a positive rating was reenlistment intentions. The members in the Combat Communications Controller cluster had overall positive ratings (more than 50 percent responding positively) in all five of the job satisfaction indicators. Yet, when responses for the two jobs within the cluster are examined separately, one job, AN/TSC-107 Combat Communications Controller job, responded less than positively to two of the five job satisfaction indicators (i.e., expressed job interest and sense of accomplishment gained from work). Personnel in the Space Communications Systems Control job also responded less than positively (fewer than 50 percent responding positively) to three of the five job satisfaction indicators. These members revealed positive ratings (albeit low; 53 percent responding positively) in perceived use of training and sense of accomplishment gained from work. Members in the Job Controller job responded less than positively to perceived use of training. Respondents in the Contingency job revealed that the work they perform does not utilize their training and that they are less than satisfied (fewer than 50 percent responding positively) with the sense of accomplishment gained from their work.

TABLE 26

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 3C2X1
TAFMS GROUPS IN CURRENT STUDY TO A COMPARATIVE SAMPLE
(PERCENT MEMBERS RESPONDING)

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	3C2X1 (N=404)	COMP SAMPLE (N=767)	3C2X1 (N=319)	COMP SAMPLE (N=700)	3C2X1 (N=742)	COMP SAMPLE (N=1,514)
EXPRESSED JOB INTEREST:						
INTERESTING	80	66	74	72	80	76
SO-SO	11	22	11	18	10	14
DULL	9	12	12	11	10	9
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	78	70	76	79	81	83
LITTLE OR NOT AT ALL	22	30	24	20	19	17
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	77	90	73	83	76	79
LITTLE OR NOT AT ALL	23	9	27	17	24	21
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	75	72	70	73	71	75
NEUTRAL	12	16	10	10	8	9
DISSATISFIED	13	12	19	16	21	16
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	58	64	65	79	73	70
NO OR PROBABLY NO	41	36	35	21	9	10
WILL RETIRE	0	0	0	0	18	19

NOTE: Columns may not add to 100 percent due to rounding or nonresponse
Comparative sample of DIRECT SUPPORT career ladders surveyed in 1993. (Includes AFSCs 1TXXX, 3VXXX, 1WXXX, 2RXXX, 2TXXX, 3EXXX, 2BXXX, 3K0X1, 2F0X1, 2S0XX, 3PXXX, and 7S0X1)

TABLE 27

COMPARISON OF JOB SATISFACTION INDICATORS FOR AFSC 3C2X1
TAFMS GROUPS IN CURRENT STUDY TO PREVIOUS STUDY
(PERCENT MEMBERS RESPONDING)*

	1-48 MONTHS TAFMS		49-96 MONTHS TAFMS		97+ MONTHS TAFMS	
	1994	1989	1994	1989	1994	1989
EXPRESSED JOB INTEREST:						
INTERESTING	80	80	74	76	80	73
SO-SO	11	11	11	12	10	15
DULL	9	8	12	11	10	11
PERCEIVED UTILIZATION OF TALENTS:						
FAIRLY WELL TO PERFECTLY	78	81	76	77	81	76
LITTLE OR NOT AT ALL	22	18	24	22	19	23
PERCEIVED UTILIZATION OF TRAINING:						
FAIRLY WELL TO PERFECTLY	77	80	73	74	76	71
LITTLE OR NOT AT ALL	23	19	27	25	24	28
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:						
SATISFIED	75	74	70	68	71	65
NEUTRAL	12	11	10	10	8	10
DISSATISFIED	13	14	19	21	21	24
REENLISTMENT INTENTIONS:						
YES OR PROBABLY YES	58	47	65	58	73	65
NO OR PROBABLY NO	41	51	35	40	9	12
WILL RETIRE	0	1	0	1	18	22

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

TABLE 28

COMPARISON OF JOB SATISFACTION INDICATORS FOR MEMBERS OF SPECIALTY CLUSTERS AND JOBS
(PERCENT MEMBERS RESPONDING)

	BCTF CLUSTER (N=153)	BCTF TECH JOB (N=72)	NODE SITE COORD JOB (N=18)	CIRCUIT ACTIONS NCO JOB (N=29)	SYS CONT CLUSTER (N=529)	SYS CONT JOB (N=10)	TECH CONT JOB (N=471)	NETWORK CONT JOB (N=24)
EXPRESSED JOB INTEREST:								
INTERESTING	90	82	89	97	82	70	82	88
SO-SO	4	6	11	0	10	20	9	13
DULL	6	13	0	3	8	10	8	0
PERCEIVED USE OF TALENTS:								
FAIRLY WELL TO PERFECTLY	86	81	100	96	86	80	86	88
LITTLE OR NOT AT ALL	14	19	0	3	15	20	14	13
PERCEIVED USE OF TRAINING:								
FAIRLY WELL TO PERFECTLY	78	73	78	90	88	90	89	71
LITTLE TO NOT AT ALL	22	26	22	10	13	10	11	29
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:								
SATISFIED	85	89	94	90	73	60	73	79
NEUTRAL	5	1	6	0	11	10	11	4
DISSATISFIED	10	10	0	10	16	30	15	17
REENLISTMENT INTENTIONS:								
PLAN TO REENLIST	73	64	78	86	68	70	69	54
PLAN NOT TO REENLIST	24	33	17	10	30	30	29	46
PLAN TO RETIRE	3	3	6	3	2	0	1	0

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

TABLE 28 (CONTINUED)

COMPARISORN OF JOB SATISFACTION INDICATORS FOR MEMBERS OF SPECIALTY CLUSTERS AND JOBS
(PERCENT MEMBERS RESPONDING)

	CRITICOMM SYS CONT JOB (N=13)	NCOIC JOB (N=148)	AUTODIN TECH CONT JOB (N=37)	COMBAT COMM CONT CLUSTER (N=101)	AN/TSQ-111 COMBAT COMM CONT JOB (N=67)	AN/TSC-107 COMBAT COMM CONT JOB (N=25)	SPACE COMM SYS CONT JOB (N=19)	MGT CLUSTER (N=168)
EXPRESSED JOB INTEREST:								
INTERESTING	85	85	43	75	90	48	47	81
SO-SO	8	7	30	15	9	28	37	9
DULL	8	7	27	10	1	24	16	10
PERCEIVED USE OF TALENTS:								
FAIRLY WELL TO PERFECTLY	77	86	38	75	88	52	53	82
LITTLE OR NOT AT ALL	23	14	62	25	12	48	47	18
PERCEIVED USE OF TRAINING:								
FAIRLY WELL TO PERFECTLY	85	82	41	77	85	60	37	71
LITTLE TO NOT AT ALL	15	18	57	23	15	40	63	28
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:								
SATISFIED	77	76	32	63	75	48	53	71
NEUTRAL	0	7	32	12	10	4	16	7
DISSATISFIED	23	18	35	25	15	48	32	22
REENLISTMENT INTENTIONS:								
PLAN TO REENLIST	85	68	70	72	73	68	42	60
PLAN NOT TO REENLIST	15	14	27	19	16	24	53	11
PLAN TO RETIRE	0	18	3	9	9	8	5	29

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

TABLE 28 (CONTINUED)

COMPARISON OF JOB SATISFACTION INDICATORS FOR MEMBERS OF SPECIALTY CLUSTERS AND JOBS
(PERCENT MEMBERS RESPONDING)

	SHIFT SUPVSR JOB (N=13)	JOB CONT JOB (N=13)	PRGM MGR JOB (N=31)	SUPT JOB (N=86)	TRNG CLUSTER (N=36)	TRNG NCO JOB (N=17)	TECH SCH INSTR JOB (N=10)	CONTINGENCY JOB (N=13)
EXPRESSED JOB INTEREST:								
INTERESTING	62	77	81	90	94	100	100	85
SO-SO	15	15	6	6	0	0	0	8
DULL	23	8	13	5	6	0	0	8
PERCEIVED USE OF TALENTS:								
FAIRLY WELL TO PERFECTLY	85	70	78	89	91	100	90	70
LITTLE OR NOT AT ALL	15	31	23	10	8	0	10	23
PERCEIVED USE OF TRAINING:								
FAIRLY WELL TO PERFECTLY	77	(46)	78	82	83	83	100	(38)
LITTLE TO NOT AT ALL	23	54	29	17	17	18	0	62
SENSE OF ACCOMPLISHMENT GAINED FROM WORK:								
SATISFIED	62	54	74	77	83	76	100	(15)
NEUTRAL	8	15	6	6	11	18	0	8
DISSATISFIED	31	31	19	17	6	6	0	77
REENLISTMENT INTENTIONS:								
PLAN TO REENLIST	62	54	71	56	72	65	80	69
PLAN NOT TO REENLIST	23	23	10	6	17	24	10	15
PLAN TO RETIRE	15	23	19	37	11	12	10	15

NOTE: Columns may not add to 100 percent due to rounding or nonresponse

When there are serious problems in a career ladder, survey respondents are usually quite free with write-in comments to complain about perceived problems in the field. Thirty-two percent of the survey sample used the write-in feature to convey some type of information. No major deficiencies were evident. Sixty-five percent of the comments dealt with respondents providing job titles and command or base assignments. Fourteen percent of the comments provided equipment that was not included in the equipment question in the background section of the JI; no particular trends were found - only isolated pieces of equipment.

SPECIAL ANALYSIS

In response to a request for information by technical training personnel, a special background question was included in the survey instrument. The question addressed the issue of paygrade held when individuals cross trained into the career ladder. A concern was expressed that senior NCOs with large amounts of time in service were cross training into AFSC 3C2X1. It was speculated that the large number of retrainees was due to a guaranteed assignment to their chosen bases of retirement and because telecommunications is a lucrative line of work outside the Air Force. Members were concerned that there are too many 3-skill level MSgts with less than 1 year communications experience.

The survey respondents were asked to identify the paygrade they held when they entered the Communications-Computer Systems Control specialty as a retrainee. Of the 1,465 respondents to the survey, 478 (33 percent) reported cross-training. Of those, only 83 (17 percent) entered the field as cross trainees in paygrades of E-5 or higher. Seven cross trainees held the 3-skill level at the time of the survey, while 76 held the 5-skill level. These results do not support the contention that a problem exists. The overwhelming number of cross trainees are in paygrades below E-5 when they cross-train (83 percent). Additionally, 92 percent of those who cross-trained as E-5 or higher had upgraded to the 5-skill level by the time the survey data were collected.

IMPLICATIONS

This survey was requested by training personnel to review the structure of the career ladder and to obtain current task and equipment data.

Survey results described in the **SPECIALTY JOBS** section clearly show a diverse specialty; with roughly one-third of the survey population performing the typical communications-computer systems control job and 50 percent of the population performing specialized control

communications-computer systems control functions or activities. Survey data indicate personnel are performing jobs as defined in the current classification structure. Training documents require a thorough review.

As is normal and expected with diverse career ladders, the survey reveals fairly low percentages of criterion groups performing most STS items and criterion objectives of the ABR course POI. STS items and objectives of the ABR course should be closely examined to determine whether retention is justified.

Members of the Communications-Computer Systems Control specialty appear fairly satisfied with their jobs, and the job satisfaction indicators are modestly more positive than seen in the previous (1989) survey.

The perceived concern over senior NCOs cross-training into this career ladder was not supported by survey findings. Only 17 percent of the cross trainees entered the career field in paygrades of E-5 or higher, and the majority had been upgraded by the time the data were collected.

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APPENDIX A

SELECTED REPRESENTATIVE TASKS PERFORMED BY MEMBERS OF CAREER LADDER JOBS

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TABLE I

BASE CENTRAL TEST FACILITY (BCTF) CLUSTER (ST0129)

GROUP SIZE: 153
PERCENT OF SAMPLE: 10%
PREDOMINANT GRADE: E-4/5

AVERAGE TICF: 63 MONTHS
AVERAGE TAFMS: 81 MONTHS

Average number of tasks performed: 72

TOP DUTIES (Average percent time spent by all members)

34% I Maintaining Telecommunications Service
19% G Performing Circuit Monitoring and Analysis

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
I442	Perform fault isolation on modems	84
I377	Configure modems	81
G252	Perform bit error rate tests on digital circuits or equipment	80
I478	Remove or replace modems	78
G253	Perform bit error rate tests on modems	78
F164	Direct wiring of cross-connections on distribution frames or matrix boards	76
F165	Implement activation or changes of circuits	75
F158	Coordinate installations with users or associated facilities	73
E142	Perform general housekeeping duties	73
I462	Punch down cross-connects on distribution frames	71
I489	Wire-wrap cross-connects on distribution frames	70
I433	Perform fault isolation on computer network circuits, such as DDN, DSN, AFNET, or REDNET	69
I426	Perform equipment loop-backs	69
F167	Label patch panels, equipment, or alternate routings	69
I425	Perform digital circuit loop-backs	67
I456	Perform operational checks on modems	65
I421	Perform continuity checks on cross-connections	64
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	65
I427	Perform fault isolation on analog circuits	63
E140	Participate in alerts or recalls	60
B39	Direct fault isolation or correction of circuit or system malfunctions	59

TABLE IA

BASE CENTRAL TEST FACILITY (BCTF) TECHNICIAN JOB (GP0054)

GROUP SIZE: 72
PERCENT OF SAMPLE: 10%
PREDOMINANT GRADE: E-4

AVERAGE TICF: 61 MONTHS
AVERAGE TAFMS: 77 MONTHS

Average number of tasks performed: 79

TOP DUTIES (Average percent time spent by all members)

36% I Maintaining Telecommunications Service
25% G Performing Circuit Monitoring and Analysis

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
G331	Test metallic line circuits for shorts	96
G330	Test metallic line circuits for opens	96
I478	Remove or replace modems	96
G253	Perform bit error rate tests on modems	90
I489	Wire-wrap cross-connects on distribution frames	87
G328	Test metallic line circuits for grounds	87
I462	Punch down cross-connects on distribution frames	86
F164	Direct wiring of cross-connections on distribution frames or matrix boards	86
G252	Perform bit error rate tests on digital circuits or equipment	86
I442	Perform fault isolation on modems	83
I377	Configure modems	81
I433	Perform fault isolation on computer network circuits, such as DDN, DSN, AFNET, or REDNET	81
I456	Perform operational checks on modems	79
E142	Perform general housekeeping duties	78
I421	Perform continuity checks on cross-connections	76
F165	Implement activation or changes of circuits	75
F157	Coordinate circuit and system outages with users or associated facilities	71
E140	Participate in alerts or recalls	71
G327	Test metallic line circuits for foreign battery	69
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	69

TABLE IB

NODE SITE COORDINATOR JOB (ST0298)

GROUP SIZE: 18
PERCENT OF SAMPLE: 1%
PREDOMINANT GRADE: E-3/4

AVERAGE TICF: 46 MONTHS
AVERAGE TAFMS: 54 MONTHS

Average number of tasks performed: 68

TOP DUTIES (Average percent time spent by all members)

33% I Maintaining Telecommunications Service
25% G Performing Circuit Monitoring and Analysis

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
I442	Perform fault isolation on modems	100
G252	Perform bit error rate tests on digital circuits or equipment	94
F159	Coordinate maintenance dispatch for user equipment problems with job control or contract maintenance	94
E142	Perform general housekeeping duties	94
I478	Remove or replace modems	94
I433	Perform fault isolation on computer network circuits, such as DDN, DSN, AFNET, or REDNET	83
F157	Coordinate circuit and system outages with users or associated facilities	83
G253	Perform bit error rate tests on modems	83
G233	Identify types of standards, such as RS 232/433/423/449, DS1/DS2/DS3/DS4, V.35, V.24, or MILSTD 188-114	83
F165	Implement activation or changes of circuits	83
G240	Monitor communications equipment using automated systems	83
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	83
G241	Monitor communications networks using automated systems	78
I425	Perform digital circuit loop-backs	78
F158	Coordinate installations with users or associated facilities	78
F167	Label patch panels, equipment, or alternate routings	78
I377	Configure modems	72
G237	Monitor automated system displays	72
I436	Perform fault isolation on digital circuits	67
G243	Monitor network management systems	67
I426	Perform equipment loop-backs	67

TABLE IC

CIRCUIT ACTIONS NCO JOB (ST0205)

GROUP SIZE: 29
PERCENT OF SAMPLE: 2%
PREDOMINANT GRADE: E-4/5

AVERAGE TICF: 91 MONTHS
AVERAGE TAFMS: 115 MONTHS

Average number of tasks performed: 86

TOP DUTIES (Average percent time spent by all members)

28% I Maintaining Telecommunications Service
21% F Performing General Communications-Computer Systems Control Functions
13% B Inspecting and Evaluating

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
F165	Implement activation or changes of circuits	100
F189	Maintain or prepare circuit history folders	97
F164	Direct wiring of cross-connections on distribution frames or matrix boards	97
F167	Label patch panels, equipment, or alternate routings	97
F178	Maintain or prepare automated or manual DD Forms 1441 (Circuit Data)	90
B41	Direct labeling of patch bays	90
A12	Establish changes in circuits or channels	86
F158	Coordinate installations with users or associated facilities	83
B35	Coordinate special communications requirements with users or DISA	79
B39	Direct fault isolation or correction of circuit or system malfunctions	79
B32	Coordinate operational changes to circuits or channels with users or Defense Information Systems Agency (DISA)	76
A18	Formulate circuit cutover plans	76
I489	Wire-wrap cross-connects on distribution frames	76
B40	Direct installation of circuit conditioning components	72
E116	Draft correspondence	72
I421	Perform continuity checks on cross-connections	72
I425	Perform digital circuit loop-backs	72
I418	Patch digital equipment	72
A10	Engineer communications circuits or systems	69
F175	Maintain or prepare automated or manual AF Forms 3215 (Communications-Computer Systems Requirement Document)	69

TABLE II

SYSTEMS CONTROLLER CLUSTER (ST0163)

GROUP SIZE: 529
PERCENT OF SAMPLE: 36%
PREDOMINANT GRADE: E-4/5

AVERAGE TICF: 60 MONTHS
AVERAGE TAFMS: 79 MONTHS

Average number of tasks performed: 109

TOP DUTIES (Average percent time spent by all members)

38% I Maintaining Telecommunications Service
22% G Performing Circuit Monitoring and Analysis
14% F Performing General Communications-Computer Systems Control Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
I430	Perform fault isolation on circuits using analog patch bays	93
I427	Perform fault isolation on analog circuits	91
I420	Perform audio channel loop-backs	90
I425	Perform digital circuit loop-backs	90
I431	Perform fault isolation on circuits using digital patch bays	89
I426	Perform equipment loop-backs	88
F157	Coordinate circuit and system outages with users or associated facilities	88
I419	Patch digital lines	85
I417	Patch audio lines	84
I418	Patch digital equipment	84
G252	Perform bit error rate tests on digital circuits or equipment	83
I436	Perform fault isolation on digital circuits	83
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	81
I416	Patch audio equipment	80
G264	Perform impulse noise tests	80
E142	Perform general housekeeping duties	79
G263	Perform idle channel noise tests	77
I442	Perform fault isolation on modems	76
I380	Coordinate circuit or equipment problems with other technical controls or communications facilities	75
G259	Perform envelope delay distortion tests	75

TABLE IIA

SYSTEMS CONTROLLER JOB (ST0259)

GROUP SIZE: 10
PERCENT OF SAMPLE: Less Than 1%
PREDOMINANT GRADE: E-3/4

AVERAGE TICF: 42 MONTHS
AVERAGE TAFMS: 62 MONTHS

Average number of tasks performed: 46

TOP DUTIES (Average percent time spent by all members)

60% I Maintaining Telecommunications Service
12% F Performing General Communications-Computer Systems Control Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
I425	Perform digital circuit loop-backs	100
I426	Perform equipment loop-backs	100
I430	Perform fault isolation on circuits using analog patch bays	100
I419	Patch digital lines	100
I431	Perform fault isolation on circuits using digital patch bays	90
I435	Perform fault isolation on DC circuits or systems	90
I427	Perform fault isolation on analog circuits	90
I418	Patch digital equipment	90
I416	Patch audio equipment	90
I442	Perform fault isolation on modems	80
I420	Perform audio channel loop-backs	80
I417	Patch audio lines	80
B39	Direct fault isolation or correction of circuit or system malfunctions	70
I436	Perform fault isolation on digital circuits	70
I424	Perform cryptographic resynchronizations	70
G252	Perform bit error rate tests on digital circuits or equipment	70
I439	Perform fault isolation on fiber optic systems	70
H353	Perform BERTs on TDM circuits	70
I484	Reroute users using digital patch bays	70
I483	Reroute users using analog patch bays	70
F157	Coordinate circuit and system outages with users or associated facilities	60
I446	Perform fault isolation on red or black distribution frames	60

TABLE IIB

TECHNICAL CONTROLLER JOB (ST0169)

GROUP SIZE: 471
PERCENT OF SAMPLE: 32%
PREDOMINANT GRADE: E-4/5

AVERAGE TICF: 61 MONTHS
AVERAGE TAFMS: 80 MONTHS

Average number of tasks performed: 116

TOP DUTIES (Average percent time spent by all members)

37% I Maintaining Telecommunications Service
24% G Performing Circuit Monitoring and Analysis

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
I430	Perform fault isolation on circuits using analog patch bays	94
I427	Perform fault isolation on analog circuits	92
I420	Perform audio channel loop-backs	91
I425	Perform digital circuit loop-backs	89
F157	Coordinate circuit and system outages with users or associated facilities	89
I431	Perform fault isolation on circuits using digital patch bays	89
I417	Patch audio lines	88
I426	Perform equipment loop-backs	87
G264	Perform impulse noise tests	87
I419	Patch digital lines	86
I418	Patch digital equipment	85
G263	Perform idle channel noise tests	84
G252	Perform bit error rate tests on digital circuits or equipment	83
I416	Patch audio equipment	83
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	83
I436	Perform fault isolation on digital circuits	83
G255	Perform C-message noise tests	80
G250	Perform amplitude vs. frequency tests	80
E142	Perform general housekeeping duties	79
I380	Coordinate circuit or equipment problems with other technical controls or communications facilities	77
F182	Maintain or prepare automated or manual DD Forms 1697 (Circuit Parameter Test Data - Analog)	77

TABLE IIC

NETWORK CONTROLLER JOB (ST0360)

GROUP SIZE: 24
PERCENT OF SAMPLE: 2%
PREDOMINANT GRADE: E-3/4

AVERAGE TICF: 40 MONTHS
AVERAGE TAFMS: 44 MONTHS

Average number of tasks performed: 58

TOP DUTIES (Average percent time spent by all members)

48% I Maintaining Telecommunications Service
14% F Performing General Communic[illegible]-Computer Systems Control Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
I424	Perform cryptographic resynchronizations	96
I425	Perform digital circuit loop-backs	96
E114	Destroy classified information or materials	96
I426	Perform equipment loop-backs	92
F157	Coordinate circuit and system outages with users or associated facilities	92
I383	Coordinate cryptographic key changes with users	92
I431	Perform fault isolation on circuits using digital patch bays	87
I401	Load or rekey cryptographic material	87
I420	Perform audio channel loop-backs	87
I427	Perform fault isolation on analog circuits	83
I430	Perform fault isolation on circuits using analog patch bays	83
G252	Perform bit error rate tests on digital circuits or equipment	83
I409	Operate cryptographic equipment	79
G253	Perform bit error rate tests on modems	79
I442	Perform fault isolation on modems	79
E142	Perform general housekeeping duties	79
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	75
I433	Perform fault isolation on computer network circuits, such as DDN, DSN, AFNET, or REDNET	75
F159	Coordinate maintenance dispatch for user equipment problems with job control or contract maintenance	75

TABLE IID

CRITICOMM SYSTEMS CONTROLLER JOB (ST0435)

GROUP SIZE: 13
PERCENT OF SAMPLE: 1%
PREDOMINANT GRADE: E-5

AVERAGE TICF: 65 MONTHS
AVERAGE TAFMS: 91 MONTHS

Average number of tasks performed: 78

TOP DUTIES (Average percent time spent by all members)

45% I Maintaining Telecommunications Service
14% F Performing General Communications-Computer Systems Control Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
I383	Coordinate cryptographic key changes with users	100
I431	Perform fault isolation on circuits using digital patch bays	100
I436	Perform fault isolation on digital circuits	100
E142	Perform general housekeeping duties	100
I424	Perform cryptographic resynchronizations	100
I426	Perform equipment loop-backs	100
I425	Perform digital circuit loop-backs	100
I447	Perform fault isolation on satellite circuits or systems	100
F192	Maintain or prepare CRITICOMM reports, such as condition reports (CONREPs) or status reports (STATREPs)	92
I380	Coordinate circuit or equipment problems with other technical controls or communications facilities	92
I384	Coordinate cryptographic synchronizations with distant end	92
I401	Load or rekey cryptographic material	92
I409	Operate cryptographic equipment	92
I439	Perform fault isolation on fiber optic systems	92
G252	Perform bit error rate tests on digital circuits or equipment	92
I442	Perform fault isolation on modems	92
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	92
I405	Monitor satellite communications links	85
G245	Monitor visual and audio circuit alarms	85
I430	Perform fault isolation on circuits using analog patch bays	85
I418	Patch digital equipment	85

TABLE III

NCOIC JOB (ST0167)

GROUP SIZE: 148
PERCENT OF SAMPLE: 10%
PREDOMINANT GRADE: E-5/6

AVERAGE TICF: 112 MONTHS
AVERAGE TAFMS: 155 MONTHS

Average number of tasks performed: 146

TOP DUTIES (Average percent time spent by all members)

21%	I	Maintaining Telecommunications Service
13%	G	Performing Circuit Monitoring and Analysis
13%	E	Performing Administrative Functions
12%	B	Directing and Implementing
12%	D	Training

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
A3	Determine work priorities	92
B36	Counsel personnel	91
B39	Direct fault isolation or correction of circuit or system malfunctions	90
C81	Write EPRs	84
B58	Supervise Communications-Computer Systems Control Specialists (AFSC 49350)	84
B49	Indoctrinate newly assigned personnel	84
G252	Perform bit error rate tests on digital circuits or equipment	83
A6	Develop work procedures	82
D86	Conduct OJT	81
F157	Coordinate circuit and system outages with users or associated facilities	81
E155	Type forms, reports, or correspondence	80
E142	Perform general housekeeping duties	80
A24	Plan work assignments	79
D89	Counsel trainees on training progress	79
E140	Participate in alerts or recalls	79
A14	Establish performance standards for subordinates	78
G253	Perform bit error rate tests on modems	78
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	77
E151	Process forms, reports, or correspondence using word processors	76

TABLE IV

AUTODIN TECHNICAL CONTROLLER JOB (ST0171)

GROUP SIZE: 37
PERCENT OF SAMPLE: 2%
PREDOMINANT GRADE: E-5

AVERAGE TICF: 59 MONTHS
AVERAGE TAFMS 73 MONTHS

Average number of tasks performed: 61

TOP DUTIES (Average percent time spent by all members)

32% I Maintaining Telecommunications Service
24% F Performing General Communications-Computer Systems Control Functions
14% G Performing Circuit Monitoring and Analysis

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
F180	Maintain or prepare automated or manual DD Forms 1443-1 (ASC Trouble and Action Record)	92
I425	Perform digital circuit loop-backs	92
F181	Maintain or prepare automated or manual DD Forms 1445 (Technical Control Communications Work Order)	92
F157	Coordinate circuit and system outages with users or associated facilities	89
I431	Perform fault isolation on circuits using digital patch bays	89
I418	Patch digital equipment	84
I424	Perform cryptographic resynchronizations	81
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	81
I419	Patch digital lines	81
G242	Monitor cumulative block error counts	78
G252	Perform bit error rate tests on digital circuits or equipment	78
F203	Maintain or prepare near real time (NRT) 55-1 status reports	76
I408	Operate computer diagnostic equipment, such as data scopes or protocol analyzers	70
B39	Direct fault isolation or correction of circuit or system malfunctions	70
F198	Maintain or prepare hazardous condition (HAZCON) reports	70
I436	Perform fault isolation on digital circuits	68
F195	Maintain or prepare DCS status reports as required by DISA 310-55-1	68
I426	Perform equipment loop-backs	68

TABLE V

COMBAT COMMUNICATIONS CONTROLLER CLUSTER (ST0165)

GROUP SIZE: 101
PERCENT OF SAMPLE: 7%
PREDOMINANT GRADE: E-5/6

AVERAGE TICF: 71 MOS
AVERAGE TAFMS: 109 MOS

Average number of tasks performed: 173

TOP DUTIES (Average percent time spent by all members)

24% J Erecting and Maintaining Tactical and Combat Communications Equipment and Facilities
23% I Maintaining Telecommunications Service
17% K Performing Mobility Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
K581	Camouflage mobile sites	99
K590	Fire M-16 weapons	95
K612	Prepare clothing or equipment for deployment	91
I420	Perform audio channel loop-backs	90
I418	Patch digital equipment	90
K607	Perform safety or road checks on vehicles	89
K596	Load or unload mobile communications equipment on or off vehicles	89
J497	Check continuity between local and distant technical controls	89
I425	Perform digital circuit loop-backs	88
J498	Check continuity between local technical control and users	87
F157	Coordinate circuit and system outages with users or associated facilities	87
K585	Don or doff chemical suits	87
K583	Clean weapons	87
K599	Palletize cargo build-up for airlift	86
I426	Perform equipment loop-backs	86
K598	Mobilize communications vans	85
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	85
J499	Check continuity of cables or in-house wiring	85
K580	Assemble or disassemble weapons	85
I419	Patch digital lines	84
I430	Perform fault isolation on circuits using analog patch bays	82

TABLE VA

AN/TSQ-111 COMBAT COMMUNICATIONS CONTROLLER JOB (ST0313)

GROUP SIZE: 67
PERCENT OF SAMPLE: 5%
PREDOMINANT GRADE: E-4/5

AVERAGE TICF: 75 MONTHS
AVERAGE TAFMS: 110 MONTHS

Average number of tasks performed: 193

TOP DUTIES (Average percent time spent by all members)

24% J Erecting and Maintaining Tactical and Combat Communications Equipment and Facilities
22% I Maintaining Telecommunications Service
14% K Performing Mobility Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
K581	Camouflage mobile sites	99
K590	Fire M-16 weapons	96
I418	Patch digital equipment	94
K612	Prepare clothing or equipment for deployment	93
J497	Check continuity between local and distant technical controls	91
K596	Load or unload mobile communications equipment on or off vehicles	91
I419	Patch digital lines	91
I425	Perform digital circuit loop-backs	91
K607	Perform safety or road checks on vehicles	91
I426	Perform equipment loop-backs	90
I420	Perform audio channel loop-backs	88
J498	Check continuity between local technical control and users	88
G252	Perform bit error rate tests on digital circuits or equipment	88
F157	Coordinate circuit and system outages with users or associated facilities	88
K584	Demobilize communications vans	88
K583	Clean weapons	88
J542	Isolate tactical circuit or system malfunctions	87
K598	Mobilize communications vans	87
K604	Perform first-aid lifesaving techniques	87
K599	Palletize cargo build-up for airlift	85
J566	Perform database generations	85
J499	Check continuity of cables or in-house wiring	85

TABLE VB

AN/TSC-107 COMBAT COMMUNICATIONS CONTROLLER JOB (ST0361)

GROUP SIZE: 25
PERCENT OF SAMPLE: 2%
PREDOMINANT GRADE: E-4/5

AVERAGE TICF: 66 MONTHS
AVERAGE TAFMS: 114 MONTHS

Average number of tasks performed: 118

TOP DUTIES (Average percent time spent by all members)

26% I Maintaining Telecommunications Service
21% J Erecting and Maintaining Tactical and Combat Communications Equipment and Facilities
21% K Performing Mobility Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
I420	Perform audio channel loop-backs	100
K581	Camouflage mobile sites	100
K596	Load or unload mobile communications equipment on or off vehicles	96
I426	Perform equipment loop-backs	96
I416	Patch audio equipment	96
K585	Don or doff chemical suits	96
K599	Palletize cargo build-up for airlift	92
J551	Operate AN/TSC-107 HF, ultra high frequency (UHF), and very high frequency (VHF) radios	92
I430	Perform fault isolation on circuits using analog patch bays	92
J497	Check continuity between local and distant technical controls	92
K590	Fire M-16 weapons	92
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	92
I375	Change frequencies on radio systems	88
F157	Coordinate circuit and system outages with users or associated facilities	88
K612	Prepare clothing or equipment for deployment	88
K607	Perform safety or road checks on vehicles	88
I422	Perform continuity checks on patch cords	88
I425	Perform digital circuit loop-backs	88
J498	Check continuity between local technical control and users	88
J499	Check continuity of cables or in-house wiring	84
E142	Perform general housekeeping duties	84

TABLE VI

SPACE COMMUNICATIONS SYSTEMS CONTROLLER JOB (ST0175)

GROUP SIZE: 19
PERCENT OF SAMPLE: 1%
PREDOMINANT GRADE: E-3/4

AVERAGE TICF: 38 MONTHS
AVERAGE TAFMS: 57 MONTHS

Average number of tasks performed: 38

TOP DUTIES (Average percent time spent by all members)

41% I Maintaining Telecommunications Service
20% G Performing Circuit Monitoring and Analysis

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
G252	Perform bit error rate tests on digital circuits or equipment	100
I436	Perform fault isolation on digital circuits	84
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	84
I431	Perform fault isolation on circuits using digital patch bays	79
I405	Monitor satellite communications links	74
I447	Perform fault isolation on satellite circuits or systems	74
H353	Perform BERTs on TDM circuits	74
I425	Perform digital circuit loop-backs	74
F157	Coordinate circuit and system outages with users or associated facilities	74
D85	Conduct OJT	74
G246	Monitor visual and audio system alarms	68
G245	Monitor visual and audio circuit alarms	68
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	68
I408	Operate computer diagnostic equipment, such as data scopes or protocol analyzers	63
E142	Perform general housekeeping duties	63
H352	Perform bit or block error rate tests (BERTs) on high-speed data circuits	63
I419	Patch digital lines	58
I426	Perform equipment loop-backs	58
E140	Participate in alerts or recalls	58
I418	Patch digital equipment	53
I452	Perform fault isolation on wideband circuits or systems	53

TABLE VII

MANAGEMENT CLUSTER (ST0060)

GROUP SIZE: 168
PERCENT OF SAMPLE: 11%
PREDOMINANT GRADE: E-6/7

AVERAGE TICF: 136 MONTHS
AVERAGE TAFMS: 182 MONTHS

Average number of tasks performed: 53

TOP DUTIES (Average percent time spent by all members)

25% E Performing Administrative Functions
21% A Organizing and Planning
20% B Directin_ nd Implementing

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
A3	Determine work priorities	81
E116	Draft correspondence	79
E151	Process forms, reports, or correspondence using word processors	73
B29	Conduct briefings	72
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	71
B36	Counsel personnel	70
C81	Write EPRs	68
B51	Interpret policies, directives, or procedures for subordinates	67
E155	Type forms, reports, or correspondence	66
E140	Participate in alerts or recalls	66
A6	Develop work procedures	63
B49	Indoctrinate newly assigned personnel	61
A28	Schedule leaves, passes, or temporary duty (TDY)	61
B54	Prepare recommendations for awards or decorations	60
E142	Perform general housekeeping duties	56
A19	Identify requirements for space, personnel, equipment, or supplies	55
A24	Plan work assignments	54
A14	Establish performance standards for subordinates	53

TABLE VIIA

SHIFT SUPERVISOR JOB (ST0182)

GROUP SIZE: 13
PERCENT OF SAMPLE: 1%
PREDOMINANT GRADE: E-5

AVERAGE TICF: 80 MONTHS
AVERAGE TAFMS: 132 MONTHS

Average number of tasks performed: 68

TOP DUTIES (Average percent time spent by all members)

22% E Performing Administrative Functions
22% F Performing General Communications-Computer Systems Control Functions
21% B Directing and Implementing

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
A3	Determine work priorities	100
F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)	92
B58	Supervise Communications-Computer Systems Control Specialists (AFSC 49350)	92
E153	Store classified information or materials	92
B39	Direct fault isolation or correction of circuit or system malfunctions	92
B36	Counsel personnel	92
C81	Write EPRs	85
B38	Direct destruction of classified documents or classified waste	85
E140	Participate in alerts or recalls	77
B54	Prepare recommendations for awards or decorations	77
E142	Perform general housekeeping duties	77
E114	Destroy classified information or materials	77
F157	Coordinate circuit and system outages with users or associated facilities	69
E125	Maintain or prepare inventories of classified information or materials	69
E151	Process forms, reports, or correspondence using word processors	69
F195	Maintain or prepare DCS status reports as required by DISA 310-55-1	69
E120	Maintain entry control logs, such as AF Forms 1109 (Visitor Register Log)	69
D89	Counsel trainees on training progress	69
B37	Direct circuit or system checks	69

TABLE VIIB

JOB CONTROLLER JOB (ST0179)

GROUP SIZE: 13
PERCENT OF SAMPLE: 1%
PREDOMINANT GRADE: F-4/5

AVERAGE TICF: 73 MONTHS
AVERAGE TAFMS: 106 MONTHS

Average number of tasks performed: 43

TOP DUTIES (Average percent time spent by all members)

48% E Performing Administrative Functions
14% F Performing General Communications-Computer Systems Control Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
E115	Dispatch maintenance specialists or equipment	100
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	92
E114	Destroy classified information or materials	92
E142	Perform general housekeeping duties	85
E153	Store classified information or materials	85
E140	Participate in alerts or recalls	85
E155	Type forms, reports, or correspondence	77
E151	Process forms, reports, or correspondence using word processors	69
E152	Secure facilities	69
E125	Maintain or prepare inventories of classified information or materials	69
E139	Monitor or coordinate workcenter compliance with maintenance schedules	69
F159	Coordinate maintenance dispatch for user equipment problems with job control or contract maintenance	62
F200	Maintain or prepare job status document forms	62
E137	Monitor mission impairment status	62
E113	Coordinate delivery of parts with supply functions	62
E117	Maintain attainment reports of emergency actions, such as THREATCONs or recalls	62
E119	Maintain correspondence files	62
E120	Maintain entry control logs, such as AF Forms 1109 (Visitor Register Log)	62
E138	Monitor operational equipment status	54

TABLE VIIC

PROGRAM MANAGER JOB (ST0184)

GROUP SIZE: 31
PERCENT OF SAMPLE: 2%
PREDOMINANT GRADE: E-6

AVERAGE TICF: 146 MONTHS
AVERAGE TAFMS: 194 MONTHS

Average number of tasks performed: 34

TOP DUTIES (Average percent time spent by all members)

33% E Performing Administrative Functions
21% A Organizing and Planning
18% B Directing and Implementing

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

REPRESENTATIVE TASKS		PERCENT MEMBERS PERFORMING
E155	Type forms, reports, or correspondence	100
E116	Draft correspondence	94
E151	Process forms, reports, or correspondence using word processors	84
B29	Conduct briefings	84
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	84
C82	Write staff studies, surveys, or special reports	81
A9	Draft recommendations for system improvements	74
E123	Maintain or prepare DD Forms 173-1 (Joint Message Form)	71
B53	Prepare operational messages	68
A3	Determine work priorities	68
E119	Maintain correspondence files	61
B35	Coordinate special communications requirements with users or DISA	58
A6	Develop work procedures	52
E153	Store classified information or materials	52

TABLE VIID

SUPERINTENDENT JOB (ST0214)

GROUP SIZE: 86
PERCENT OF SAMPLE: 6%
PREDOMINANT GRADE: E-6/7

AVERAGE TICF: 157 MONTHS
AVERAGE TAFMS: 203 MONTHS

Average number of tasks performed: 63

TOP DUTIES (Average percent time spent by all members)

25% B Directing and Implementing
24% A Organizing and Planning
19% E Performing Administrative Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
A3	Determine work priorities	95
B36	Counsel personnel	94
C81	Write EPRs	94
E116	Draft correspondence	92
B51	Interpret policies, directives, or procedures for subordinates	91
B54	Prepare recommendations for awards or decorations	88
A28	Schedule leaves, passes, or temporary duty (TDY)	87
B49	Indoctrinate newly assigned personnel	86
A1	Assign personnel to duty positions	85
A14	Establish performance standards for subordinates	84
A19	Identify requirements for space, personnel, equipment, or supplies	81
A6	Develop work procedures	79
B60	Supervise Communications-Computer Systems Control Technicians (AFSC 49370)	78
A24	Plan work assignments	78
B29	Conduct briefings	78
C66	Evaluate individuals for promotion	76
A25	Prepare job descriptions	76
A2	Assign sponsors for newly assigned personnel	76
A17	Establish standing operating procedures (SOPs) and operating instructions (OIs)	73
C68	Evaluate job descriptions	72
C63	Analyze workload requirements	71

TABLE VIII

TRAINING CLUSTER (ST0052)

GROUP SIZE: 36
PERCENT OF SAMPLE: 2%
PREDOMINANT GRADE: E-5

AVERAGE TICF: 94 MONTHS
AVERAGE TAFMS: 132 MONTHS

Average number of tasks performed: 44

TOP DUTIES (Average percent time spent by all members)

50% D Training
19% E Performing Administrative Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
D83	Administer tests	92
D109	Score tests	92
D111	Write test questions	81
D99	Evaluate progress of students	75
D89	Counsel trainees on training progress	72
B36	Counsel personnel	69
D94	Develop training modules or plans	69
D100	Evaluate training methods	64
E142	Perform general housekeeping duties	64
E155	Type forms, reports, or correspondence	56
D86	Conduct OJT	56
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	56
E140	Participate in alerts or recalls	53
D85	Conduct facility rating or station qualification training	50
E151	Process forms, reports, or correspondence using word processors	50
D98	Evaluate OJT trainees	50
D105	Maintain training records, charts, or graphs	50

TABLE VIIIA

TRAINING NCO JOB (ST0310)

GROUP SIZE: 17
PERCENT OF SAMPLE: 1%
PREDOMINANT GRADE: E-5/6

AVERAGE TICF: 89 MONTHS
AVERAGE TAFMS: 129 MONTHS

Average number of tasks performed: 67

TOP DUTIES (Average percent time spent by all members)

47% D Training
17% E Performing Administrative Functions
10% B Directing and Implementing

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
D94	Develop training modules or plans	100
D83	Administer tests	100
D89	Counsel trainees on training progress	100
D85	Conduct facility rating or station qualification training	100
D98	Evaluate OJT trainees	94
D109	Score tests	94
D99	Evaluate progress of students	88
D100	Evaluate training methods	88
D90	Determine OJT requirements	88
D111	Write test questions	82
D106	Plan OJT	82
D105	Maintain training records, charts, or graphs	82
D86	Conduct OJT	82
B49	Indoctrinate newly assigned personnel	82
E142	Perform general housekeeping duties	82
D95	Direct OJT programs	76
D102	Maintain CAMS recurring training forecasts	76
D101	Maintain Core Automated Maintenance System (CAMS) task table lists	76
B36	Counsel personnel	76
D104	Maintain CAMS workcenter task assignments	71
E116	Draft correspondence	71
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	71

TABLE VIIIB

TECHNICAL SCHOOL INSTRUCTOR JOB (ST0344)

GROUP SIZE: 10
PERCENT OF SAMPLE: Less Than 1%
PREDOMINANT GRADE: E-5

AVERAGE TICF: 93 MONTHS
AVERAGE TAFMS: 132 MONTHS

Average number of tasks performed: 17

TOP DUTIES (Average percent time spent by all members)

65% D Training
23% E Performing Administrative Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
D99	Evaluate progress of students	100
D109	Score tests	100
D83	Administer tests	100
D111	Write test questions	100
D87	Conduct resident course classroom training	90
D91	Determine resident course training requirements	90
D100	Evaluate training methods	70
E142	Perform general housekeeping duties	70
E155	Type forms, reports, or correspondence	70
D89	Counsel trainees on training progress	60
B36	Counsel personnel	60
D94	Develop training modules or plans	50
E151	Process forms, reports, or correspondence using word processors	50
D93	Develop resident course or career development course (CDC) curriculum materials	50
E140	Participate in alerts or recalls	50

TABLE IX

CONTINGENCY JOB (ST0166)

GROUP SIZE: 13
PERCENT OF SAMPLE: 1%
PREDOMINANT GRADE: E-4/5

AVERAGE TICF: 92 MONTHS
AVERAGE TAFMS: 123 MONTHS

Average number of tasks performed: 40

TOP DUTIES (Average percent time spent by all members)

39% E Performing Administrative Functions
36% K Performing Mobility Functions

THE FOLLOWING TASKS ARE IN DESCENDING ORDER OF PERCENT MEMBERS PERFORMING:

	REPRESENTATIVE TASKS	PERCENT MEMBERS PERFORMING
E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper	100
K585	Don or doff chemical suits	92
K590	Fire M-16 weapons	92
K583	Clean weapons	92
E140	Participate in alerts or recalls	85
K612	Prepare clothing or equipment for deployment	85
K580	Assemble or disassemble weapons	85
E142	Perform general housekeeping duties	77
E155	Type forms, reports, or correspondence	77
K607	Perform safety or road checks on vehicles	69
K616	Replace chemical mask filters	69
E153	Store classified information or materials	62
E152	Secure facilities	62
K596	Load or unload mobile communications equipment on or off vehicles	62
K581	Camouflage mobile sites	62
E151	Palletize cargo build-up for airlift	54
E114	Destroy classified information or materials	54
E116	Draft correspondence	54
E118	Maintain contingency plans	54
K594	Identify communications requirements for deployment	54
K587	Erect or dismantle 12-man tents	54
K604	Perform first-aid lifesaving techniques	54

APPENDIX B

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APPENDIX B

These task modules (TMs) were developed to illustrate the content of jobs by summarizing tasks performed in common by incumbents across the Communications-Computer Systems Control career ladder. These TMs were derived by statistical clustering process in CODAP that identifies groups of related tasks and groups them together to form TMs. The process for identifying these related tasks is called coperformance. Coperformance assumes that if incumbents perform task A and task B, there is a high likelihood that these two tasks share common skills and knowledge and can be trained together. For example, if an individual performs one teletype circuit task, the probability is very high that he or she also will perform other teletype circuit tasks. Thus, the group of teletype circuit tasks can be considered a "natural group" of associated or related tasks (see TM 0001) below. CODAP calculates an index of co-performance for each task with every other task by examining the task performance patterns of all the survey respondents as a whole. The statistical clustering generally approximated these "natural groupings."

The title of each TM is our best estimate as to the general subject content of the group of tasks. These TMs are useful for organizing the task data into meaningful units and as a way to concisely summarize the extensive job data. However, TMs are only one way to organize the information. Other strategies may also be valid.

0001 teletype circuits -- QC (18,17d)

1	G225	Adjust regenerative repeaters
2	G290	Perform out-of-service total peak telegraph distortion tests
3	G294	Perform QCs on data buffers
4	G304	Perform QCs on speech pulse devices
5	G306	Perform QCs on telegraph hi-low signal converters
6	G307	Perform QCs on telegraph hubbing devices
7	G308	Perform QCs on teletypewriter keyboards
8	G309	Perform QCs on teletypewriter printers
9	G310	Perform QCs on teletypewriter regenerative repeaters
10	G311	Perform QCs on teletypewriter reperforators
11	G312	Perform QCs on teletypewriters
12	G320	Perform singing point tests to detect hybrid howl
13	I392	Evaluate chirpsounder data
14	I468	Remove or replace buffer cards

0002 circuit/system testing - perform tests (17c,d)

1	G256	Perform crypto bypass tests
2	G257	Perform digital phase jitter tests
3	G258	Perform echo return loss tests
4	G261	Perform harmonic distortion tests

0002 circuit/system testing - perform tests (17c,d) (Continued)

5	G277	Perform intermodulation distortion tests
6	G278	Perform longitudinal balance tests
7	G282	Perform nonlinear distortion tests
8	G321	Perform single-tone interference tests
9	G324	Perform timing jitter tests

0003 continuity checks

1	J496	Adjust tone generators
2	J497	Check continuity between local and distant technical controls
3	J498	Check continuity between local technical control and users
4	J499	Check continuity of cables or in-house wiring

0004 technical control consoles

1	F180	Maintain or prepare automated or manual DD Forms 1443-1 (ASC Trouble and Action Record)
2	G293	Perform QCs on cryptographic equipment
3	I406	Operate automated technical control consoles
4	I463	Reboot automated technical control consoles

0005 circuit/system testing - perf measurements (17e)

1	H347	Monitor bipolar violation errors
2	H349	Perform all 1's detection measurements
3	H354	Perform bipolar measurements on TDM/PCM systems
4	H359	Perform excess zero detection measurements
5	H360	Perform frame error rate measurements
6	H361	Perform frame loss detection measurements
7	H364	Perform percent error-free seconds measurements
8	H372	Perform T1 frequency measurements
9	H373	Perform T1 signal level measurements

0006 circuit conditions - QC (18)

1	G214	Adjust amplitude equalizers
2	G216	Adjust delay equalizers
3	G219	Adjust four-way or six-way bridging networks
4	G220	Adjust four-wire terminating sets
5	G227	Adjust signaling units
6	I466	Remove or replace amplitude equalizers
7	I467	Remove or replace attenuator pads
8	I477	Remove or replace line amplifiers
9	I481	Remove or replace signaling units

0007 circuit actions - supervision -O/P (16f6)

1	A5	Develop plans to inform communications circuit users of changes in circuit configurations
2	A10	Engineer communications circuits or systems
3	A12	Establish changes in circuits or channels
4	A18	Formulate circuit cutover plans
5	B32	Coordinate operational changes to circuits or channels with users or Defense Information Systems Agency (DISA)
6	B35	Coordinate special communications requirements with users or DISA
7	B40	Direct installation of circuit conditioning components
8	B41	Direct labeling of patch bays
9	B53	Prepare operational messages
10	E123	Maintain or prepare DD Forms 173-1 (Joint Message form)
11	F175	Maintain or prepare automated or manual AF Forms 3215 (Communications-Computer Systems Requirement Document)

0008 comm-computer sys - fault isolation (13a,b)

1	I437	Perform fault isolation on facsimile transmissions
2	I439	Perform fault isolation on fiber optic systems
3	I446	Perform fault isolation on red or black distribution frames
4	I448	Perform fault isolation on signaling equipment
5	I450	Perform fault isolation on TDM/PCM systems
6	I451	Perform fault isolation on weather net systems
7	I452	Perform fault isolation on wideband circuits or systems

0009 circuit conditions - QC (8c)

1	G267	Perform in-service QCs on direct current (DC) circuits
2	G270	Perform in-service QCs on time division multiplexing/pulse code modulation (TDM/PCM) equipment
3	G271	Perform in-service QCs on tone-off idle supervisory signals
4	G272	Perform in-service QCs on tone-on idle supervisory signals
5	G284	Perform out-of-service QCs on DC circuits
6	G287	Perform out-of-service QCs on TDM/PCM equipment
7	G288	Perform out-of-service QCs on tone-on idle supervisory signals
8	G292	Perform QCs on attenuator pads
9	G297	Perform QCs on four-way or six-way bridging networks
10	G298	Perform QCs on four-wire telephone terminating sets
11	G299	Perform QCs on line amplifiers
12	G303	Perform QCs on signaling units
13	G322	Perform terminal impedance tests
14	H355	Perform C-notched noise measurements on TDM/PCM systems
15	H369	Perform signal-to-notched noise ratio measurements

0010 network management

1	G243	Monitor network management systems
2	G281	Perform network management functions
3	I411	Operate on-line computer network system diagnostic terminals
4	I443	Perform fault isolation on network management systems
5	I464	Remotely configure communications equipment parameters, such as databases or interfaces

0011 comm-computer sys - mobile/transportable (15d)

1	J494	Adjust cesium beam frequencies
2	J531	Interface with Defense Meteorological Satellite Program (DMSP) vans
3	J536	Interface with tactical air base weather system (TABWS) vans
4	J538	Interface with tactical weather analysis center (TWAC) vans

0012 publications library

1	A15	Establish publication libraries
2	A16	Establish requirements for publication files
3	E131	Maintain publications libraries
4	E134	Maintain stock levels of forms

0013 training

1	A13	Establish facility or personnel proficiency rating programs
2	D92	Develop job proficiency guides (JPGs)
3	D96	Direct training programs, other than OJT
4	D97	Establish study reference files
5	D107	Prepare training reports
6	D108	Procure training aids, space, or equipment
7	D110	Select individuals for specialized training

0014 security/classified - admin function

1	B38	Direct destruction of classified documents or classified waste
2	C76	Inspect area security or classified material inventories
3	E114	Destroy classified information or materials
4	E120	Maintain entry control logs, such as AF Forms 1109 (Visitor Register Log)
5	E125	Maintain or prepare inventories of classified information or materials
6	E152	Secure facilities
7	E153	Store classified information or materials
8	F193	Maintain or prepare cryptographic keying material logs

0015 circuit conditions - remove or replace (17a,c)

1	I471	Remove or replace delay equalizers
2	I472	Remove or replace echo suppressors
3	I473	Remove or replace four-wire four-way bridges
4	I474	Remove or replace four-wire six-way bridges
5	I475	Remove or replace four-wire terminating sets

0016 mobility (15)

1	J561	Operate power production equipment
2	J563	Operationally maintain mobilizers
3	K601	Perform cover and concealment techniques for work party security
4	K603	Perform disease and pestilence countermeasures
5	K605	Perform individual movement techniques for work party security
6	K606	Perform military field sanitation techniques

0017 general tech control (16e)

1	F158	Coordinate installations with users or associated facilities
2	F164	Direct wiring of cross-connections on distribution frames or matrix boards
3	F165	Implement activation or changes of circuits
4	F167	Label patch panels, equipment, or alternate routings
5	F178	Maintain or prepare automated or manual DD Forms 1441 (Circuit Data)
6	F189	Maintain or prepare circuit history folders
7	G230	Conduct acceptance testing of new systems, circuits, or equipment
8	G232	Identify types of protocol used on computer systems, such as SDLC/HDLC or X.25
9	G233	Identify types of standards, such as RS 232/433/423/449, DS1/DS2/DS3/DS4; V.35, V.24 or MILSTD 188-114
10	H352	Perform bit or block error rate tests (BERTs) on high-speed data circuits
11	H353	Perform BERTs on TDM circuits
12	I377	Configure modems
13	I393	Fabricate cables
14	I400	Isolate faults to commercial interfaces (demarcs)
15	I408	Operate computer diagnostic equipment, such as data scopes or protocol analyzers
16	I433	Perform fault isolation on computer network circuits, such as DDN, DSN, AFNET, or REDNET
17	I434	Perform fault isolation on computer systems or associated peripherals
18	I442	Perform fault isolation on modems
19	I456	Perform operational checks on modems
20	I462	Punch down cross-connects on distribution frames
21	I478	Remove or replace modems
22	I489	Wire-wrap cross-connects on distribution frames

0018 supply

1	B55	Prepare requisitions for equipment or supplies
2	E113	Coordinate delivery of parts with supply functions
3	E129	Maintain or prepare supply forms, such as AF Forms 2005
4	F176	Maintain or prepare automated or manual AF Forms 332 (Base Civil Engineer Work Request)
5	F177	Maintain or prepare automated or manual AF Forms 9 (Request for Purchase)

0019 supervision - O/P budgets/requirements

1	A7	Develop working agreements with using agencies or host bases
2	A8	Draft budget requirements
3	A9	Draft recommendations for system improvements
4	A19	Identify requirements for space, personnel, equipment, or supplies

0019 supervision - O/P budgets/requirements (Continued)

5	A20	Plan layouts of facilities
6	C65	Evaluate budget requirements
7	C82	Write staff studies, surveys, or special reports

0020 circuit analysis - monitor auto systems (17i)

1	G235	Monitor automated circuit displays
2	G236	Monitor automated error counts
3	G237	Monitor automated system displays
4	G240	Monitor communications equipment using automated systems
5	G241	Monitor communications networks using automated systems
6	G242	Monitor cumulative block error counts
7	G244	Monitor transmission systems using automated systems

0021 supervision - management (A,B,C)

1	A1	Assign personnel to duty positions
2	A2	Assign sponsors for newly assigned personnel
3	A4	Develop organizational charts
4	A14	Establish performance standards for subordinates
5	A17	Establish standing operating procedures (SOPs) and operating instructions (OIs)
6	A24	Plan work assignments
7	A25	Prepare job descriptions
8	A28	Schedule leaves, passes, or temporary duty (TDY)
9	B30	Conduct staff meetings
10	B36	Counsel personnel
11	B49	Indoctrinate newly assigned personnel
12	B50	Initiate personnel action requests
13	B51	Interpret policies, directives, or procedures for subordinates
14	B54	Prepare recommendations for awards or decorations
15	B58	Supervise Communications-Computer Systems Control Specialists (AFSC 49350)
16	B60	Supervise Communications-Computer Systems Control Technicians (AFSC 49370)
17	C63	Analyze workload requirements
18	C66	Evaluate individuals for promotion
19	C68	Evaluate job descriptions
20	C74	Evaluate use of workspace, equipment, or supplies
21	C75	Indorse enlisted performance reports (EPRs)
22	C81	Write EPRs
23	E112	Conduct facility familiarization visits
24	E132	Maintain SOPs or OIs

0022 safety/security

1	A22	Plan safety programs
2	A23	Plan security programs
3	B45	Implement safety programs
4	B46	Implement security programs
5	C67	Evaluate inspection reports or procedures
6	C69	Evaluate quality control programs
7	C70	Evaluate safety programs
8	C71	Evaluate security programs

0023 maintain/prepare forms

1	F195	Maintain or prepare DCS status reports as required by DISA 310-55-1
2	F198	Maintain or prepare hazardous condition (HAZCON) reports
3	F203	Maintain or prepare near real time (NRT) 55-1 status reports
4	I458	Perform time hacks on master station clocks

0024 circuit card assembly - tactical/combat (15)

1	J491	Adjust circuit card assembly (CCA) speakers, amplifiers, or microphones
2	J492	Adjust CCA teletype modulation rate converters
3	J500	Conduct tactical performance assessment programs (TPAPs) of mobile communications systems
4	J501	Configure CCA data channel multiplexers
5	J502	Configure CCA data orderwire diphase modems
6	J503	Configure CCA digital channels, such as input/output
7	J504	Configure CCA four-wire termination sets
8	J505	Configure CCA signaling converters
9	J506	Configure CCA telemetry demultiplexers
10	J507	Configure CCA teletype modulation rate converters
11	J508	Configure CCA VF telegraph keyer/converters
12	J509	Configure CCA 16/32 phase-lock loops
13	J512	Configure equipment using manual channel reassignment function
14	J513	Configure loop key generator buffers
15	J567	Perform interface or communications entry point checks of mobile communications vans
16	J568	Perform manual operations on AAT panels
17	J569	Perform manual operations on ADT panels
18	J570	Perform manual operations on channel reassignment functions
19	J571	Perform manual operations on fault detection subsystems (FDSs)
20	J577	Perform station equipment fault isolation using FDSs

0025 satellite transmission media - tactical (11d)

1	J511	Configure equipment using automated channel reassignment function
2	J519	Coordinate configuration of ground mobile forces (GMF) satellite terminals TSC-94A/100A with GMF facilities
3	J520	Coordinate configuration of tropo-satellite support radios (TSSRs) with wideband personnel
4	J521	Coordinate tactical communications plans with distant ends
5	J522	Coordinate tactical site communications set-ups with site engineers
6	J526	Install telephone equipment
7	J529	Interface with AN/TSQ-146 multiplexer (MUX) vans
8	J533	Interface with GMF satellite terminals TSC-94A/100A
9	J535	Interface with mobile site communications
10	J537	Interface with tactical switching vans, such as AN/TTC-39
11	J539	Interface with TRC/170 digitals
12	J541	Interface with TSSRs
13	J542	Isolate tactical circuit or system malfunctions
14	J543	Lay tactical communications cables
15	J544	Maintain forms or records using AN/TSQ-111 applications software
16	J545	Maintain master station logs using AN/TSQ-111 applications software
17	J548	Monitor circuits using automatic digital testers (ADTs) in PROCESSOR mode
18	J550	Monitor voltage, amps, and frequency to ensure generator power accuracy and stability
19	J555	Operate AN/TSQ-111 van data processing subsystems (DPSs)
20	J559	Operate environmental control units
21	J564	Patch AN/TSQ-111 distribution frames or equipment
22	J566	Perform database generations

0026 modulation/frequency (9)

1	I374	Change antennas
2	I375	Change frequencies on radio systems
3	I385	Coordinate frequency changes or checks with transmitter or receiver sites
4	I388	Determine optimum operating frequencies for HF communications
5	I390	Direct frequency changes or checks
6	I440	Perform fault isolation on HF circuits or systems

0027 cryptographic functions (10a)

1	I383	Coordinate cryptographic key changes with users
2	I384	Coordinate cryptographic synchronizations with distant end
3	I401	Load or rekey cryptographic material
4	I409	Operate cryptographic equipment
5	I424	Perform cryptographic resynchronizations
6	I428	Perform fault isolation on bulk encryption equipment

0028 mobility (15)

1	J525	Install facility electrical grounds
2	K580	Assemble or disassemble weapons
3	K581	Camouflage mobile sites
4	K582	Camouflage personnel
5	K583	Clean weapons
6	K584	Demobilize communications vans
7	K585	Don or doff chemical suits
8	K586	Erect or dismantle Darnell tents
9	K587	Erect or dismantle 12-man tents
10	K588	Erect or dismantle 5-man tents
11	K590	Fire M-16 weapons
12	K595	Inspect chemical suits
13	K596	Load or unload mobile communications equipment on or off vehicles
14	K597	Load or unload support equipment on or off vehicles, such as trains, ships, or planes
15	K598	Mobilize communications vans
16	K599	Palletize cargo build-up for airlift
17	K600	Perform camp cantonment construction techniques
18	K602	Perform decontamination procedures for chemical warfare agents
19	K604	Perform first-aid lifesaving techniques
20	K607	Perform safety or road checks on vehicles
21	K609	Practice convoy techniques for work party security
22	K611	Practice self-protection from extreme weather
23	K612	Prepare clothing or equipment for deployment
24	K613	Prepare load lists
25	K614	Prepare sites for mobile communication
26	K615	Prepare vehicles for airlift
27	K616	Replace chemical mask filters
28	K617	Secure mobile sites or equipment for hazardous weather conditions
29	K618	Weigh vehicles

0029 transmission media - combat/tactical (11)

1	J515	Configure SB-3614 tactical switchboards
2	J517	Configure signaling units
3	J524	Erect or dismantle wire antennas
4	J527	Interface with AN/TSC-107 vans
5	J551	Operate AN/TSC-107 HF, ultra high frequency (UHF), and very high frequency (VHF) radios
6	J552	Operate AN/TSC-107 vans
7	J562	Operate SB-3614 tactical switchboard

0030 training - OJT

1	D83	Administer tests
2	D84	Assign on-the-job training (OJT) trainers
3	D85	Conduct facility rating or station qualification training
4	D89	Counsel trainees on training progress
5	D90	Determine OJT requirements
6	D94	Develop training modules or plans
7	D95	Direct OJT programs
8	D98	Evaluate OJT trainees
9	D99	Evaluate progress of students
10	D100	Evaluate training methods
11	D105	Maintain training records, charts, or graphs
12	D106	Plan OJT
13	D109	Score tests
14	D111	Write test questions

0031 measuring analog circuits - baseband signals (17c)

9		
1	H335	Calculate baseband loading (BBL) values using established baseband and load factor formulas
2	H336	Calculate link median idle channel noise (ICN) values
3	H337	Check radio pilots
4	H338	Determine link median ICN values
5	H343	Measure automatic gain control (AGC) and convert to RSL
6	H344	Measure channel levels on baseband signals
7	H345	Measure pilot levels, such as group, supergroup, or base band
8	H350	Perform baseband sweeps
9	H351	Perform BBL measurements

0032 systems control - trend analysis (16f2)

1	F208	Maintain or prepare trend analysis files
2	G325	Perform trend analysis of audio circuits or systems
3	G326	Perform trend analysis of digital circuits or systems
4	H334	Analyze performance data to detect degrading trends

0033 comm-computer systems - LANs (13d)

1	A11	Engineer local area networks (LANs)
2	I398	Install LANs
3	I404	Monitor LAN status
4	I441	Perform fault isolation on LANs

0034 supervision - (A,E)

1	A3	Determine work priorities
2	A6	Develop work procedures
3	B29	Conduct briefings
4	E116	Draft correspondence
5	E151	Process forms, reports, or correspondence using word processors
6	E155	Type forms, reports, or correspondence

0035 systems control - fault isolation/patching (16e12)

1	F157	Coordinate circuit and system outages with users or associated facilities
2	F159	Coordinate maintenance dispatch for user equipment problems with job control or contract maintenance
3	F185	Maintain or prepare automated or manual DD Forms 1753 (Master Station Log)
4	G252	Perform bit error rate tests on digital circuits or equipment
5	G253	Perform bit error rate tests on modems
6	G260	Perform fox tests
7	I380	Coordinate circuit or equipment problems with other technical controls or communications facilities
8	I416	Patch audio equipment
9	I417	Patch audio lines
10	I418	Patch digital equipment
11	I419	Patch digital lines
12	I420	Perform audio channel loop-backs
13	I425	Perform digital circuit loop-backs
14	I426	Perform equipment loop-backs
15	I427	Perform fault isolation on analog circuits
16	I430	Perform fault isolation on circuits using analog patch bays
17	I431	Perform fault isolation on circuits using digital patch bays
18	I435	Perform fault isolation on DC circuits or systems
19	I436	Perform fault isolation on digital circuits

0036 tech controller - analog/digital patch bays (16e)

1	I379	Coordinate alternate routing of circuits with other DCS stations
2	I389	Direct alternate routing of circuits
3	I391	Establish on-call patches
4	I483	Reroute users using analog patch bays
5	I484	Reroute users using digital patch bays
6	I485	Restore high-speed data circuits

0037 circuit and system testing - QC (18a,17e)

1	F181	Maintain or prepare automated or manual DD Forms 1445 (Technical Control Communications Work Order)
2	F182	Maintain or prepare automated or manual DD Forms 1697 (Circuit Parameter Test Data - Analog)
3	F199	Maintain or prepare in-service or out-of-service quality control forms or reports
4	G250	Perform amplitude vs frequency tests
5	G255	Perform C-message noise tests
6	G259	Perform envelope delay distortion tests
7	G263	Perform idle channel noise tests
8	G264	Perform impulse noise tests
9	G265	Perform in-service quality checks (QCs) of composite signal transmission levels
10	G266	Perform in-service QCs of voice circuit speech levels
11	G279	Perform maximum change in audio frequency tests
12	G280	Perform maximum net loss variation tests
13	G283	Perform notch noise tests

0038 DPAS

1	I386	Create cross-connects using PASSTHROUGH mode in DPAS
2	I394	Implement restoral plans using DPAS
3	I423	Perform cross-connects using DPAS
4	I454	Perform frame provisioning using DPAS
5	I465	Remotely switch microwave equipment using transmission monitoring and control systems (TRAMCONs)
6	I488	Troubleshoot the DPAS frame using PASSTHROUGH mode

0039 meas metallic line circuit - circuit testing (17h)

1	G327	Test metallic line circuits for foreign battery
2	G328	Test metallic line circuits for grounds
3	G329	Test metallic line circuits for loop resistance
4	G330	Test metallic line circuits for opens
5	G331	Test metallic line circuits for shorts
6	G332	Test metallic line circuits for shunts
7	G333	Test metallic line circuits for transient voltages

0040 satellite networks - DOSS (13d)

1	L621	Coordinate satellite handovers with OPRs
2	L623	Ensure database integrity by comparing satellite profiles
3	L628	Operate DSCS operational support system (DOSS) peripheral equipment
4	L632	Perform DOSS menu operations

0041 satellite networks (13d)

1	L627	Operate AN/WSC-44 CGT equipment
2	L641	Perform PCC message processing procedures
3	L644	Perform satellite minimize procedures
4	L645	Process ephemeris data

0042 transmission media - PCC (11d)

1	L634	Perform primary control center (PCC) access approvals
2	L635	Perform PCC access cancellations
3	L636	Perform PCC access changes
4	L637	Perform PCC access denials
5	L638	Perform PCC access pre-emptions
6	L639	Perform PCC access requests
7	L640	Perform PCC end-of-month closeout procedures

0043 CAMS

1	D101	Maintain Core Automated Maintenance System (CAMS) task table lists
2	D102	Maintain CAMS recurring training forecasts
3	D103	Maintain CAMS training visibility ledgers
4	D104	Maintain CAMS workcenter task assignments

0044 Tasks not referenced

1	A21	Plan quality control programs
2	A26	Prepare local restoral plans
3	A27	Prepare unit emergency or contingency plans
4	B31	Coordinate frequency utilization with using agencies
5	B33	Coordinate power outages or exercises with power production facilities
6	B34	Coordinate requests for maintenance assistance with offices of primary responsibility (OPRs)
7	B37	Direct circuit or system checks
8	B39	Direct fault isolation or correction of circuit or system malfunctions
9	B42	Direct maintenance of administrative files
10	B43	Direct quality control programs
11	B44	Direct remote site operational checks or adjustments
12	B47	Implement suggestion programs
13	B48	Implement telecommunications facilities testing programs
14	B52	Maintain defense station, automatic digital network (AUTODIN) station, or reporting station files
15	B56	Supervise Apprentice Communications-Computer Systems Control Specialist (AFSC 49330)
16	B57	Supervise civilian personnel, other than foreign nationals
17	B59	Supervise Communications-Computer Systems Control Superintendents (AFSC 49390)
18	B61	Supervise foreign nationals
19	B62	Supervise personnel with AFSCs other than AFSC 493X0
20	C64	Conduct speed-of-service surveys
21	C72	Evaluate suggestions
22	C73	Evaluate unit emergency or contingency plans
23	C77	Inspect communications facilities
24	C78	Investigate accidents or incidents
25	C79	Perform operational evaluations of mobile units
26	C80	Write civilian performance ratings
27	D86	Conduct OJT
28	D87	Conduct resident course classroom training
29	D88	Conduct training conferences
30	D91	Determine resident course training requirements
31	D93	Develop resident course or career development course (CDC) curriculum materials

0044 Tasks not referenced (Continued)

32	E115	Dispatch maintenance specialists or equipment
33	E117	Maintain attainment reports of emergency actions, such as THREATCONs or recalls
34	E118	Maintain contingency plans
35	E119	Maintain correspondence files
36	E121	Maintain or prepare AF Forms 2446 (Schedule of Technician Availability)
37	E122	Maintain or prepare commanders' situation reports (SITREPs) or summaries
38	E124	Maintain or prepare facility access rosters
39	E126	Maintain or prepare inventories of equipment, other than mission essential end items
40	E127	Maintain or prepare inventories of mission essential end items
41	E128	Maintain or prepare personnel TDY order reports
42	E130	Maintain personnel TDY trip reports
43	E133	Maintain spot intelligence reports
44	E135	Maintain unit readiness reports
45	E136	Monitor equipment for time, measurement, and diagnostic equipment (TMDE) servicing
46	E137	Monitor mission impairment status
47	E138	Monitor operational equipment status
48	E139	Monitor or coordinate workcenter compliance with maintenance schedules
49	E140	Participate in alerts or recalls
50	E141	Perform courier actions for controlled or classified materials
51	E142	Perform general housekeeping duties
52	E143	Perform operator maintenance on computer printers, such as setting paper thickness or replacing paper
53	E144	Perform operator maintenance on teletypewriters, such as changing ribbons or replacing paper
54	E145	Perform periodic inspections of tools or support equipment
55	E146	Pick up or deliver equipment at precision measurement equipment laboritories (PMELs)
56	E147	Prepare equipment for TMDE servicing
57	E148	Prepare force status reports
58	E149	Prepare operations event or incident reports
59	E150	Prepare residual asset reports
60	E154	Submit attainment reports of emergency actions, such as THREATCONs or recalls
61	F156	Change tapes on recorders or soundscribers
62	F160	Coordinate power changeovers with communications support facilities
63	F161	Coordinate scheduled downtime requests with DISA or facility control office (FCO)
64	F162	Coordinate significant activities or events with communications support facilities
65	F163	Create 2400 reports using digital patch and access system (DPAS) history files
66	F166	Initiate responses to emergency action messages or disaster reports
67	F168	Maintain circuit data bases, such as DCS or critical intelligence communications systems (CRITICOMM)
68	F169	Maintain circuit trunk directives, such as DISA notifications or publications
69	F170	Maintain communications facilities link data reports
70	F171	Maintain European or Pacific AUTODIN status reports

0044 Tasks not referenced (Continued)

71	F172	Maintain European or Pacific secure voice status reports
72	F173	Maintain or prepare AUTODIN switching center (ASC) station interruption reports
73	F174	Maintain or prepare AUTODIN tributary interruption reports
74	F179	Maintain or prepare automated or manual DD Forms 1443 (Trouble and Restoration Record)
75	F183	Maintain or prepare automated or manual DD Forms 1698 (Wideband Outage Record)
76	F184	Maintain or prepare automated or manual DD Forms 1700 (Master Clock Log)
77	F186	Maintain or prepare automatic secure voice communications (AUTOSEVOCOM) network reports
78	F187	Maintain or prepare cable record forms
79	F188	Maintain or prepare circuit efficiency reports
80	F190	Maintain or prepare communications detailed outage reports (DORs)
81	F191	Maintain or prepare communications network logs
82	F192	Maintain or prepare CRITICOMM reports, such as condition reports (CONREPs) or status reports (STATREPs)
83	F194	Maintain or prepare daily link performance assessment or performance monitoring program forms
84	F196	Maintain or prepare DD Forms 1368 (Modified Use of Leased Communication Facilities)
85	F197	Maintain or prepare defense switching network (DSN) switch interruptions or restoral reports
86	F200	Maintain or prepare job status document forms
87	F201	Maintain or prepare meaconing, interference, jamming, and intrusion (MIJI) reports
88	F202	Maintain or prepare mission impairment reports
89	F204	Maintain or prepare performance monitoring program (PMP) graphs or charts
90	F205	Maintain or prepare reports control system (RCS) reports
91	F206	Maintain or prepare satellite communications reports
92	F207	Maintain or prepare scheduled downtime requests
93	F209	Maintain weather circuit reports
94	F210	Maintain weather vision status report facsimile (FAX) charts
95	F211	Notify communications support facilities of severe weather warning calls
96	F212	Prepare high frequency (HF) entry exercise after-action reports
97	F213	Update communications facilities and link resources data (CREDATA) reports
98	G215	Adjust channel banks
99	G217	Adjust echo suppressers
100	G218	Adjust first-level multiplexers, such as AN/FCC-98 or AN/FCC-100
101	G221	Adjust hybrids
102	G222	Adjust line amplifiers
103	G223	Adjust line drivers
104	G224	Adjust line isolation relays (LIRs) or battery isolation relays (BIRs)
105	G226	Adjust second-level multiplexers, such as AN/FCC-97 or AN/FCC-99
106	G228	Adjust speech pulse devices

0044 Tasks not referenced (Continued)

107	G229	Adjust voice frequency carrier telegraph (VFCT) terminals
108	G231	Detect protocol errors in each layer, such as link or transport
109	G234	Isolate reception problems due to antenna malfunctions
110	G238	Monitor base level data processing systems or circuits
111	G239	Monitor circuit or system eye pattern displays
112	G245	Monitor visual and audio circuit alarms
113	G246	Monitor visual and audio system alarms
114	G247	Operate pilot make-busy panels
115	G248	Operate secondary testboards
116	G249	Operate trunk make-busy panels
117	G251	Perform analog phase jitter tests
118	G254	Perform bit error rate tests on quasi-analog circuits
119	G262	Perform hits and dropouts tests
120	G268	Perform in-service QCs on frequency division multiplexing (FDM) equipment
121	G269	Perform in-service QCs on HF systems
122	G273	Perform in-service QCs on VFCT terminals
123	G274	Perform in-service QCs using automated systems, such as DPASs or integrated digital network exchanges (IDNXs)
124	G275	Perform in-service total peak telegraph distortion tests
125	G276	Perform insertion loss tests on circuits or components
126	G285	Perform out-of-service QCs on FDM equipment
127	G286	Perform out-of-service QCs on HF systems
128	G289	Perform out-of-service QCs using automated systems, such as DPAS or IDNX
129	G291	Perform performance monitoring programs (PMPs)
130	G295	Perform QCs on data terminals
131	G296	Perform QCs on fiber optic cables
132	G300	Perform QCs on line drivers
133	G301	Perform QCs on metallic line circuits
134	G302	Perform QCs on modems
135	G305	Perform QCs on standard test tone levels or frequencies
136	G313	Perform QCs on VFCT terminals
137	G314	Perform quality assurance testing of DSN circuits
138	G315	Perform self-tests on circuits or systems
139	G316	Perform single frequency (SF) or duplex signaling tests on private branch exchange (PBX) subscriber lines
140	G317	Perform SF signaling tests on interswitch trunks (ISTs)
141	G318	Perform SF tests on four-wire subscriber lines
142	G319	Perform signaling tests on foreign exchange (FEX) lines
143	G323	Perform threshold tests or self-tests on modems
144	H339	Determine link status
145	H340	Interpret eye pattern displays on TDM/PCM systems
146	H341	Make receive signal level (RSL) graphs

147	H342	Manually switch automatic microwave equipment
148	H346	Measure synchronization pilot levels
149	H348	Monitor wideband high-speed data circuits
150	H356	Perform compression-expansion linearity tests
151	H357	Perform data signaling rate measurements
152	H358	Perform digital level measurements on TDM/PCM systems
153	H362	Perform noise power ratio/basic noise ratio (NPR/BNR) measurements
154	H363	Perform nonlinear distortion measurements on TDM/PCM systems
155	H365	Perform quantization distortion measurements on TDM/PCM systems
156	H366	Perform radio orderwire channel noise level measurements
157	H367	Perform round trip delay measurements
158	H368	Perform selective voltmeter noise (SVN) slot measurements
159	H370	Perform timing jitter measurements on TDM/PCM systems
160	H371	Perform training slip detection measurements
161	I376	Configure cryptographic equipment
162	I378	Coordinate alternate routing of antenna systems with transmitter or receiver sites
163	I381	Coordinate circuit releases with subscribers
164	I382	Coordinate conference calls with customers
165	I387	Crimp cross-connects on distribution frames
166	I395	Implement telecommunications systems contingency plans
167	I396	Implement telecommunications systems restoral plans
168	I397	Install circuits in outlying buildings
169	I399	Isolate faults on ground-to-air communication circuits or systems
170	I402	Monitor fault indicator systems
171	I403	Monitor interface timing signals
172	I405	Monitor satellite communications links
173	I407	Operate backup power sources
174	I410	Operate maintenance administrative facility terminals for circuits or systems
175	I412	Operate system administrator consoles for distributed computer systems
176	I413	Operate system monitor consoles for centralized computer systems
177	I414	Operationally check fixed or backup power sources
178	I415	Operationally check ground-to-air communications circuits or systems
179	I421	Perform continuity checks on cross-connections
180	I422	Perform continuity checks on patch cords
181	I429	Perform fault isolation on cable systems
182	I432	Perform fault isolation on commercial phone systems
183	I438	Perform fault isolation on FDM systems
184	I444	Perform fault isolation on phase modulation systems
185	I445	Perform fault isolation on quasi-analog modulation (QAM) systems
186	I447	Perform fault isolation on satellite circuits or systems
187	I449	Perform fault isolation on speech pulse devices
188	I453	Perform fiber optic cable maintenance, such as splicing, connecting, or installing

0044 Tasks not referenced (Continued)

189	I455	Perform operational checks on commercial phone systems
190	I457	Perform switchovers of backup generators
191	I459	Perform tributary timing comparison checks
192	I460	Plan installation of fixed cable systems
193	I461	Process forms using computer assisted technical controls (CATCs)
194	I469	Remove or replace components on distribution frames
195	I470	Remove or replace cryptographic equipment
196	I476	Remove or replace isolation relays
197	I479	Remove or replace multiplexers
198	I480	Remove or replace outdoor cable systems, in nontactical environments
199	I482	Replace defective cards on communications equipment, such as DPAS or TRAMCONs
200	I486	Run data lines to computer terminals
201	I487	Solder cross-connects on distribution frames
202	I490	Write databases for automated technical control consoles
203	J493	Adjust CCA voice frequency (VF) telegraph keyer/converters
204	J495	Adjust low-speed cable driver modems
205	J510	Configure communications interface control modules (CICMs)
206	J514	Configure low-speed cable driver modems
207	J516	Configure secondary testboards
208	J518	Connect power cables
209	J523	Erect or dismantle parabolic dish antennas
210	J528	Interface with AN/TSC-62A vans
211	J530	Interface with computer-assisted force management systems (CAFMSs)
212	J532	Interface with DPS 40/15 data processing systems
213	J534	Interface with message processing centers (MPCs)
214	J540	Interface with TRC/97 analogs
215	J546	Monitor cesium beam frequencies
216	J547	Monitor circuits using automatic analog testers (AATs) in PROCESSOR mode
217	J549	Monitor DPS 40/15 data processing systems
218	J553	Operate AN/TSC-60 van remote heads
219	J554	Operate AN/TSC-62A vans
220	J556	Operate AN/TSQ-111 vans in degraded mode
221	J557	Operate AN/URC-56 vans
222	J558	Operate AN/UXC-7 tactical facsimile machines
223	J560	Operate in-line repeaters for low-speed cable driver modems
224	J565	Patch antenna systems
225	J572	Perform QCs on analog-to-digital converters
226	J573	Perform QCs on computer peripherals
227	J574	Perform QCs on fiber optic cables in tactical environments
228	J575	Perform QCs on four-wire termination sets
229	J576	Perform QCs on power supplies
230	J578	Remove and replace CCAs

0044 Tasks not referenced (Continued)

231	J579	Remove and replace communications equipment in tactical vans
232	K589	Fire .38-caliber handguns
233	K591	Fire M-60 weapons
234	K592	Fire shotguns
235	K593	Fire 9mm weapons
236	K594	Identify communications requirements for deployment
237	K608	Perform site surveys
238	K610	Practice emergency action destruction procedures (EADPs)
239	L619	Calculate satellite look angles
240	L620	Coordinate satellite degradations with appropriate agencies
241	L622	Create master satellite access schedules
242	L624	Maintain master satellite access schedules
243	L625	Monitor satellite anomalies
244	L626	Monitor satellite transmissions
245	L629	Operate FSC-82/GRC-189 equipment
246	L630	Operate general purpose scan programs
247	L631	Perform defense satellite automatic spectrum analyzer (DASA) stand-alone operations
248	L633	Perform multipoint communications network (MCN) functions
249	L642	Perform reboot or restart procedures
250	L643	Perform satellite configuration control element (SCCE) operations

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